



Hydro Place, 500 Columbus Drive.
P.O. Box 12400, St. John's, NL
Canada A1B 4K7
t. 709.737.1400 f. 709.737.1800
www.nlh.nl.ca

October 13, 2020

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Reliability and Resource Adequacy Study Review - 2020–2021 Winter Readiness Planning Report

Further to correspondence received from the Board of Commissioners of Public Utilities ("Board") on October 13, 2016, correspondence from the Board dated March 5, 2020 requesting additional detail, and Board Order No. P.U.14(2020) directing Newfoundland and Labrador Hydro ("Hydro") file monthly updates on approved Holyrood Supplemental Capital Projects, please find enclosed Hydro's 2020–2021 Winter Readiness Planning Report.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/kd.sk

Encl.

cc: **Board of Commissioners of Public Utilities**
Jacqui Glynn
Maureen P. Greene, Q.C.
PUB Official Email

Newfoundland Power
Gerard M. Hayes
Kelly C. Hopkins
Regulatory Email

Consumer Advocate
Dennis M. Browne, Q.C., Browne Fitzgerald Morgan & Avis
Stephen F. Fitzgerald, Browne Fitzgerald Morgan & Avis
Sarah G. Fitzgerald, Browne Fitzgerald Morgan & Avis
Bernice Bailey, Browne Fitzgerald Morgan & Avis

Industrial Customer Group

Paul L. Coxworthy, Stewart McKelvey
Denis J. Fleming, Cox & Palmer
Dean A. Porter, Poole Althouse

Labrador Interconnected Group

Senwung Luk, Olthuis Kleer Townshend LLP
Julia Brown, Olthuis Kleer Townshend LLP



2020–2021 Winter Readiness Planning Report

October 13, 2020

A report to the Board of Commissioners of Public Utilities



Contents

1.0	Background and Introduction	1
2.0	Annual Work Plan and Winter Readiness Status	2
2.1	COVID-19 Impacts and Management of Change	3
2.2	Thermal Generation.....	4
2.3	Gas Turbine Generation.....	6
2.4	Hydraulic Generation.....	8
2.5	Transmission and Terminal Stations	12
2.6	Network Services	16
3.0	Status of Winter Readiness for Capital Projects	16
4.0	Plant and Equipment Testing	17
4.1	Thermal Generation.....	17
4.2	Gas Turbine Generation.....	18
4.3	Hydraulic Generation.....	18
4.4	Transmission and Terminal Stations	18
4.4.1	Transmission	18
4.4.2	Terminal Stations	19
4.4.3	Transmission and Terminal Station Testing	19
4.5	Network Services	20
5.0	Generation Outage Schedule.....	20
6.0	Critical Spares.....	20
6.1	Overview	20
6.2	2020–2021 Winter Season.....	20
6.2.1	Thermal Generation.....	21
6.2.2	Gas Turbines.....	21
6.2.3	Hydraulic Generation	22
7.0	Near-Term Reliability and Resource Adequacy	23
7.1	Assumptions.....	23
7.1.1	Asset Performance	23
7.1.2	Labrador-Island Link Assumptions	24
7.1.3	Availability of Capacity Assistance Agreements	24

7.1.4	Availability of Maritime Link Imports.....	25
7.2	System Energy Capability.....	26
7.3	Load Forecast	27
7.4	Scenarios Considered and Results	28
7.4.1	Scenarios	28
7.4.2	Expected Unserved Energy and Loss of Load Hours Analysis	29
8.0	Risk and Risk Mitigation	31
8.1	Bay d'Espoir Operations.....	32
8.1.1	Bay d'Espoir Penstocks.....	32
8.1.2	Bay d'Espoir Unit 1 Vibration	33
8.1.3	Bay d'Espoir Terminal Station Circuit Breaker Failures.....	33
8.2	Muskrat Falls to Happy Valley Interconnection Project	34
9.0	Conclusion.....	35

List of Appendices

Appendix A: Status of Capital Projects Related to Winter Readiness

Appendix B: Status of Winter Readiness Testing of Plant and Equipment – Thermal Generation

Appendix C: Status of Winter Readiness Testing of Plant and Equipment – Hydraulic Generation

Appendix D: Master Generation Outage Schedule

Appendix E: Critical Spares Status Listing – Thermal Generation

Appendix F: Critical Spares Status Listing – Gas Turbine Generation

Appendix G: Critical Spares Status Listing – Hydraulic Generation

Appendix H: Holyrood Supplemental Capital Projects – Monthly Update

1.0 Background and Introduction

The Board of Commissioners of Public Utilities (“Board”), in correspondence dated October 13, 2016, directed Newfoundland and Labrador Hydro (“Hydro”) to provide an annual report detailing its winter readiness (“WR”) planning. This report, for the 2020–2021 winter season, addresses the following items as requested by the Board:

- The status of Annual Work Plan (“AWP”) items, in the format previously provided to the Board, for Hydro’s generating plants and transmission and terminal stations including the completion date, outstanding items to complete, and any risks to completion or as a result of failure to complete;
- A description and schedule for all outstanding 2020 capital projects for Hydro’s generating plant and transmission and terminal stations including progress on completion status to date and expected completion date;
- The identification of all equipment and plant testing to be carried out in advance of the winter period (generation plant, emergency diesels, black start generators, fire systems, transmission system equipment) including progress on completion status to date;
- The planned generation outage schedule for the period September to December 31, 2020 including an explanation for any planned outages extending beyond December 1, 2020;
- An update of critical spares assessment and procurement;
- The forecast loads and expected generation capacity and reserves (setting out the basis for calculation) for the upcoming winter, as of December 1, 2020, including capacity assistance agreements in place or planned; and,
- An identification of any risks that could impact the WR of assets as of December 1, 2020 and associated contingency plans.

This report also includes Hydro’s Holyrood Supplemental Capital Projects – Monthly Update as per Board Order P.U. 14(2020). In that Order, the Board directed Hydro to file monthly updates on the status of the approved capital projects from June 2020 to September 2020 and thereafter to provide updates as part of the Winter Readiness reports filed in October 2020, November 2020, and December, 2020.

1 Except where otherwise noted, information presented in this report covers both the Island
2 Interconnected System and the Labrador Interconnected System for the period ending September 30,
3 2020.¹

4 **2.0 Annual Work Plan and Winter Readiness Status**

5 Hydro's AWP integrates all planned activities for the year (i.e., corrective maintenance ("CM"),
6 preventive maintenance ("PM"), and capital project support) that are critical to safe and reliable
7 production and transmission of electricity. Hydro regularly measures the progress of its AWP execution,
8 in comparison with the plan, and is able to track the AWP status down to the level of individual work
9 plan items. The individual AWPs for various assets are incorporated into an integrated AWP. While some
10 AWP activities are planned for completion through December 2020, those tagged as WR activities were
11 planned for completion by December 1, 2020.

12 This report provides a consolidated summary of operation and maintenance progress, both for the
13 entire AWP (i.e., first chart in each set) and the WR tasks (i.e., second chart in each set), as of September
14 18, 2020, for each of the following areas of operations:

- 15 ● Holyrood Thermal Generating Station ("Holyrood TGS"):
 - 16 ○ Units 1, 2, and 3; and
 - 17 ○ Balance of Plant including black start diesels.
- 18 ● Gas Turbines:
 - 19 ○ Holyrood;
 - 20 ○ Hardwoods;
 - 21 ○ Stephenville; and
 - 22 ○ Happy Valley.
- 23 ● Hydraulic Generation:
 - 24 ○ Bay d'Espoir;
 - 25 ○ Cat Arm;

¹ The data used to generate the status charts in Section 2 reflect a data cutoff date of September 18, 2020.

- 1 ○ Hinds Lake;
 - 2 ○ Paradise River;
 - 3 ○ Upper Salmon; and
 - 4 ○ Granite Canal.
- 5 ● Transmission and Rural Operations for the Island Interconnected System and Labrador
 - 6 Interconnected System:
 - 7 ○ Transmission; and
 - 8 ○ Terminal Stations.
 - 9 ● Network Services.
- 10 Each chart in Section 2 includes the completed and remaining operations and maintenance AWP and
11 WR tasks, as well as an indication of the planned task completion target to date. A text box adjacent to
12 each chart set indicates Hydro's forecasted completion status as of September 18, 2020 in relation to
13 AWP and WR activities (i.e., Green: On Target, Yellow: Caution – Recovery Required, Red: Target Will
14 Not be Fully Met). Relevant highlights are also provided.
- 15 Refer to Section 3 and Appendix A for the status of capital projects that include additional WR tasks.

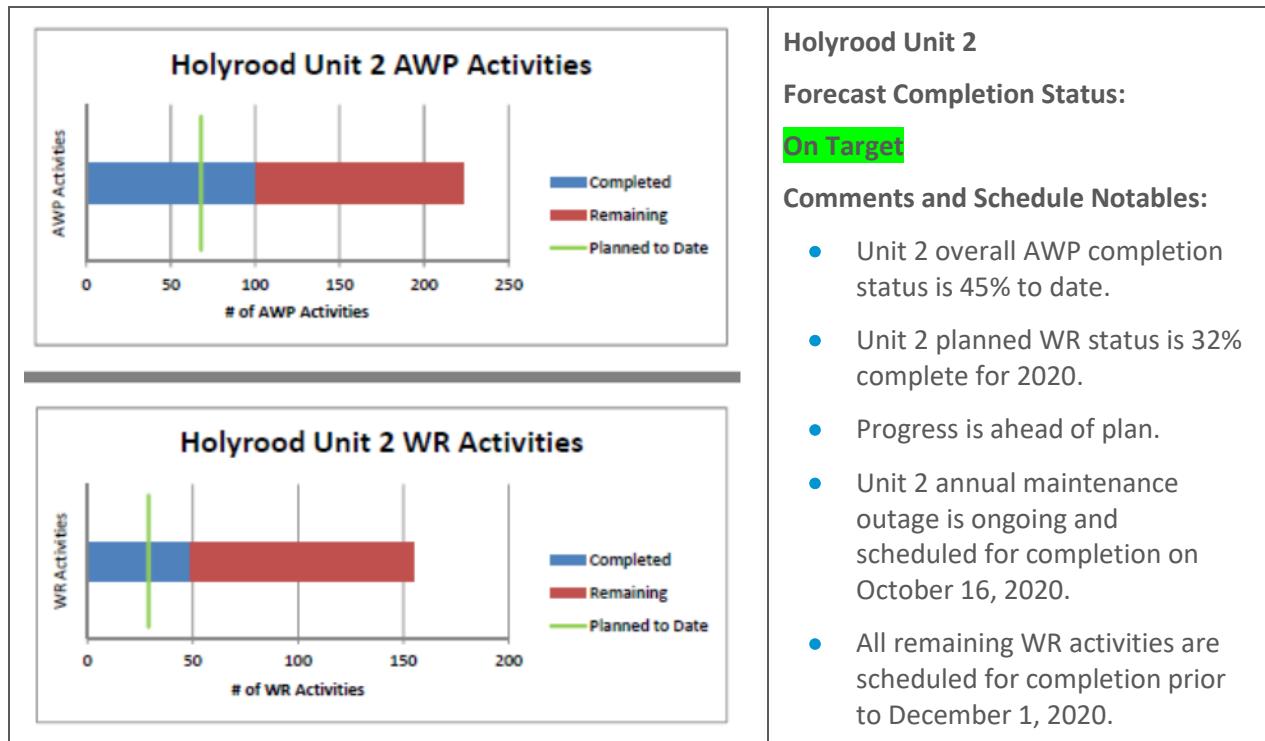
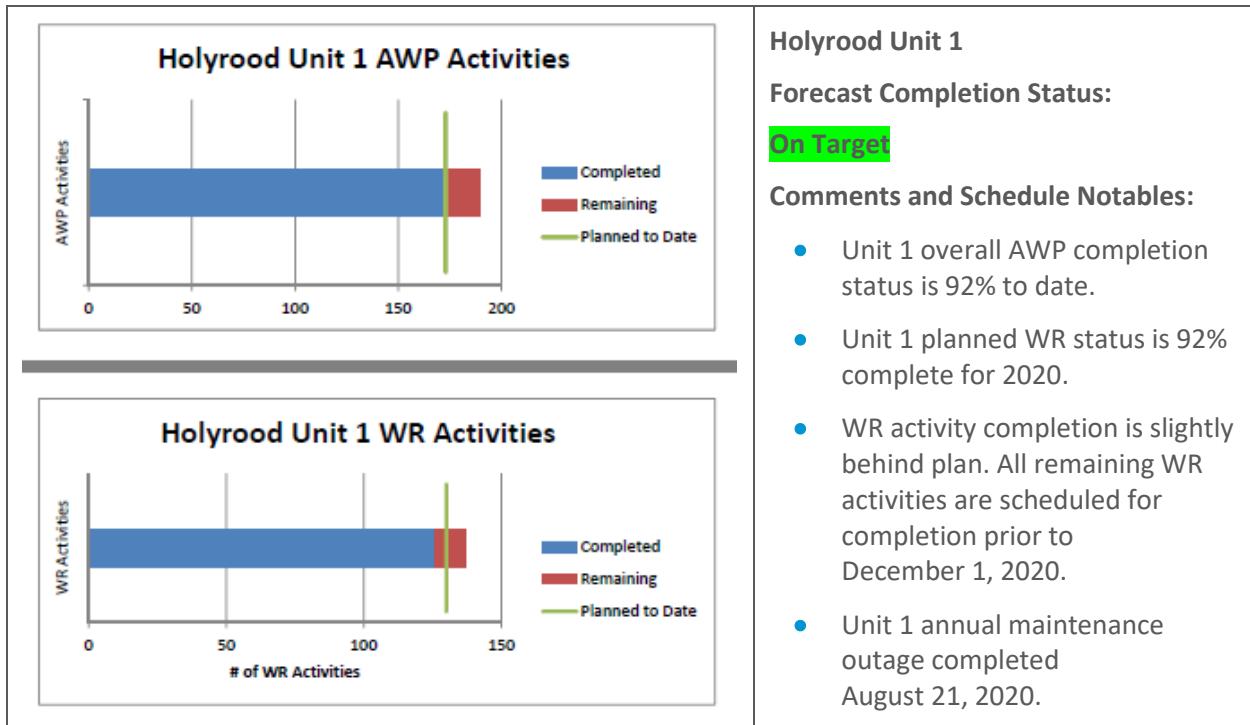
2.1 COVID-19 Impacts and Management of Change

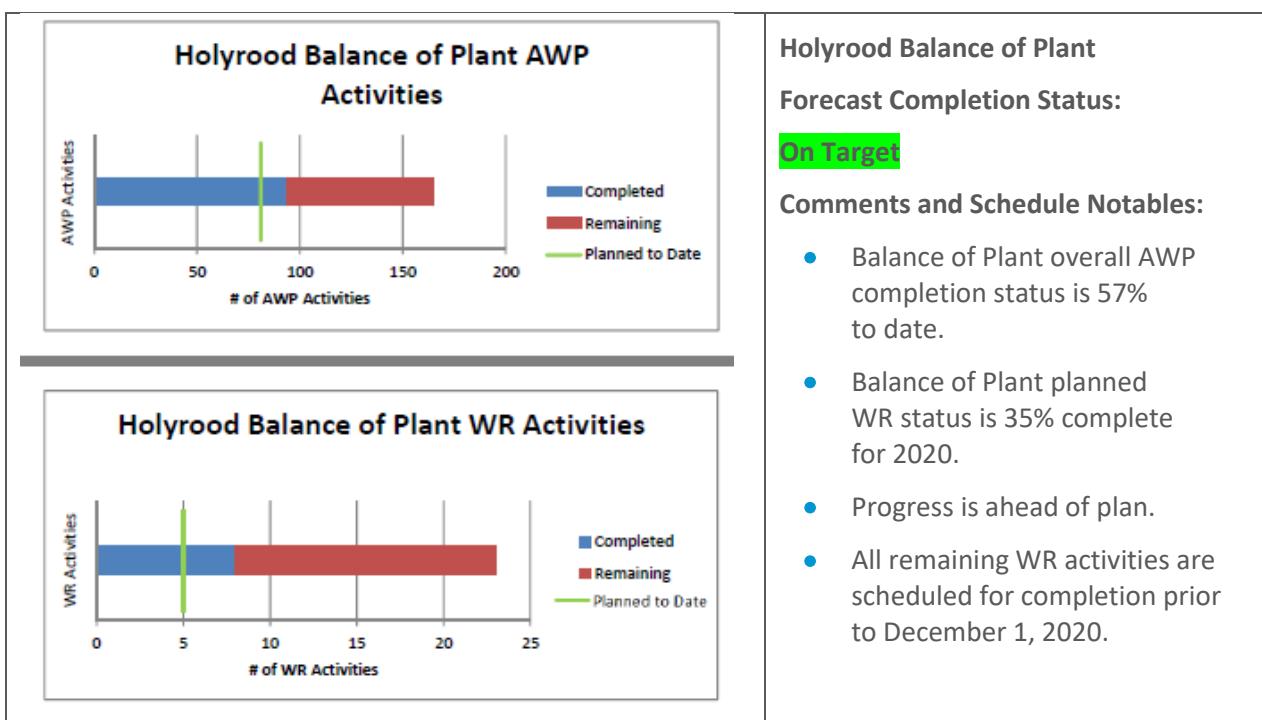
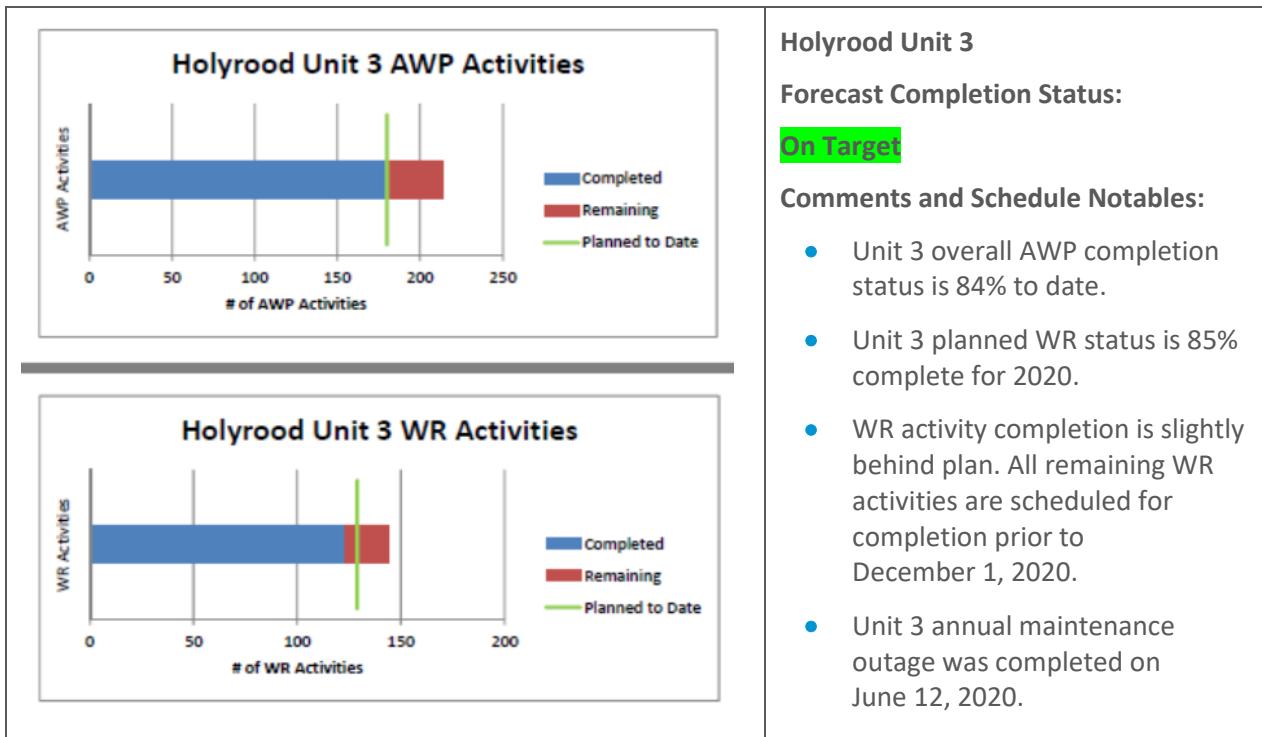
The 2020 AWP was established prior to the emergence of the COVID-19 pandemic. In response to the pandemic, Hydro implemented business continuity plans and protocols for work execution to maintain its ability to complete essential work to ensure service reliability throughout the remainder of the year.

Late in the first quarter of 2020, Hydro reviewed and prioritized its AWP to ensure completion of all essential operating and capital work in light of the pandemic. As the pandemic continued to evolve through the year, the review and prioritization process continued. In some cases, Hydro has rescheduled work to ensure effective execution at a later time than originally planned in 2020. Where work is considered for cancellation or deferral beyond 2020, Hydro utilizes a Management of Change ("MOC") process to ensure risks are properly assessed and mitigation plans established and executed where required to maintain system reliability.

2.2 Thermal Generation

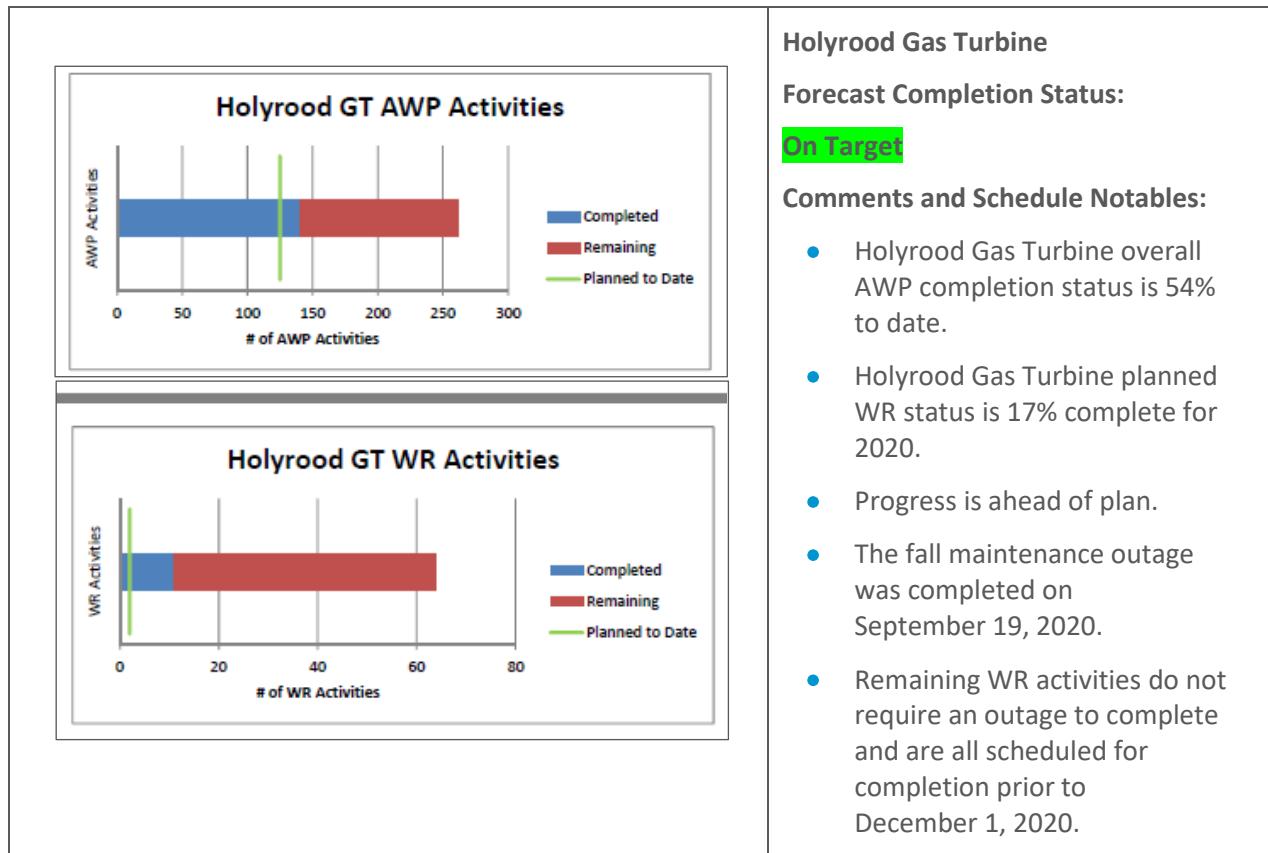
The status of AWP and WR execution at the Holyrood TGS is summarized in the charts below. As noted, all planned 2020 WR work is on target for completion by December 1, 2020.



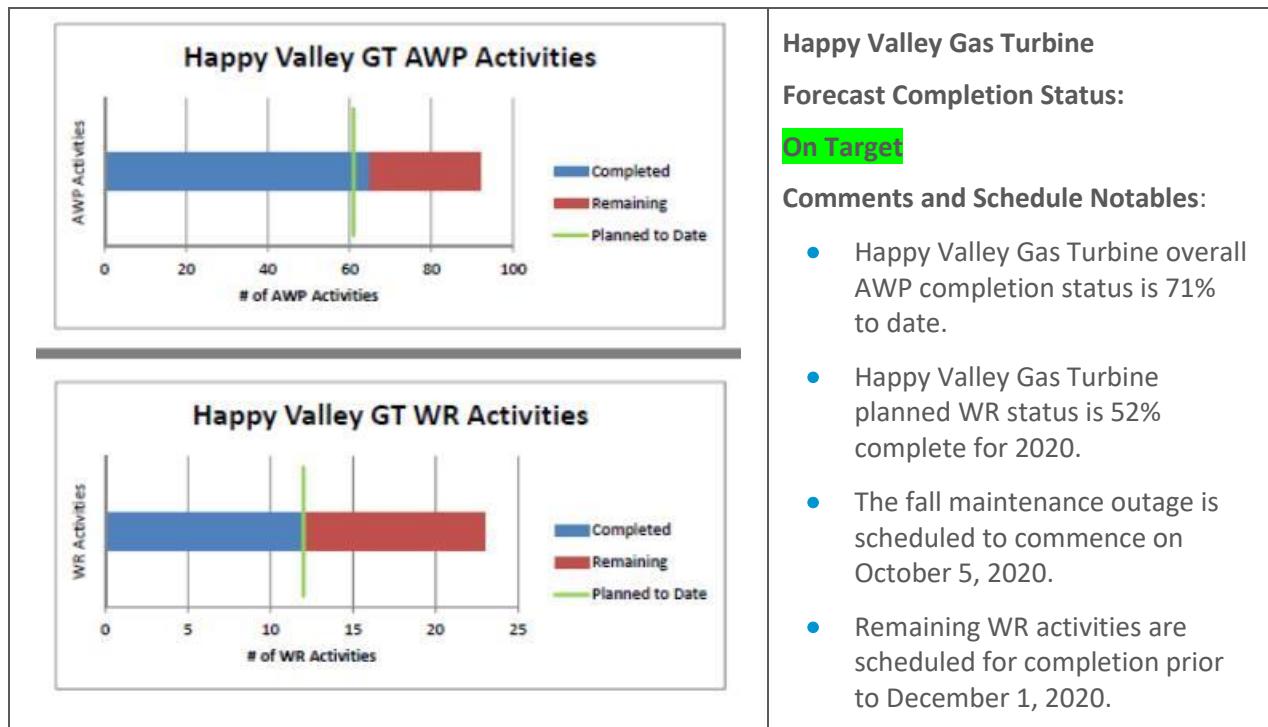


2.3 Gas Turbine Generation

The current status of AWP and WR execution at the Holyrood, Hardwoods, Stephenville, and Happy Valley Gas Turbines is summarized in the following charts. Planned WR work for all gas turbines is on target for completion by December 1, 2020.

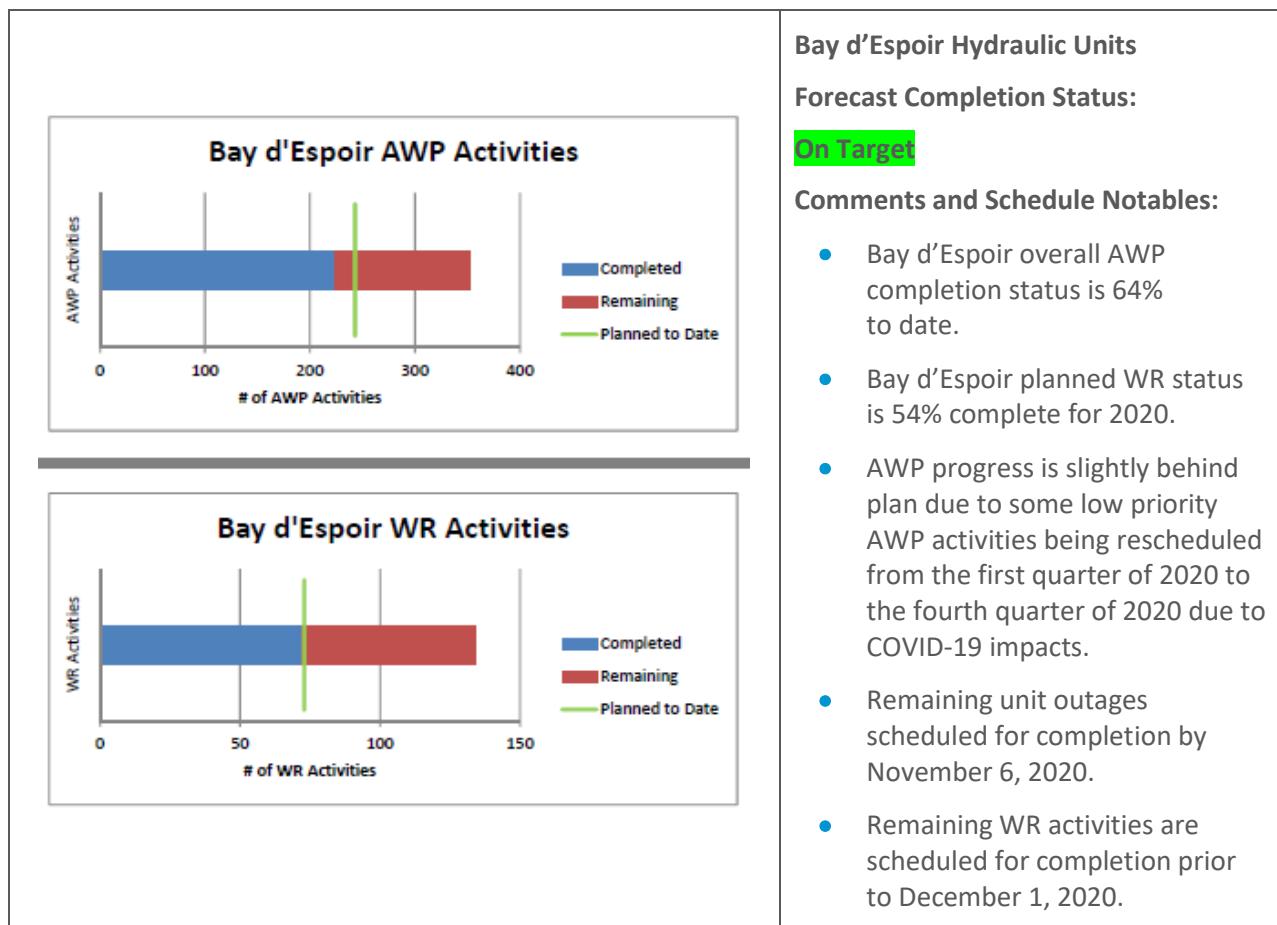


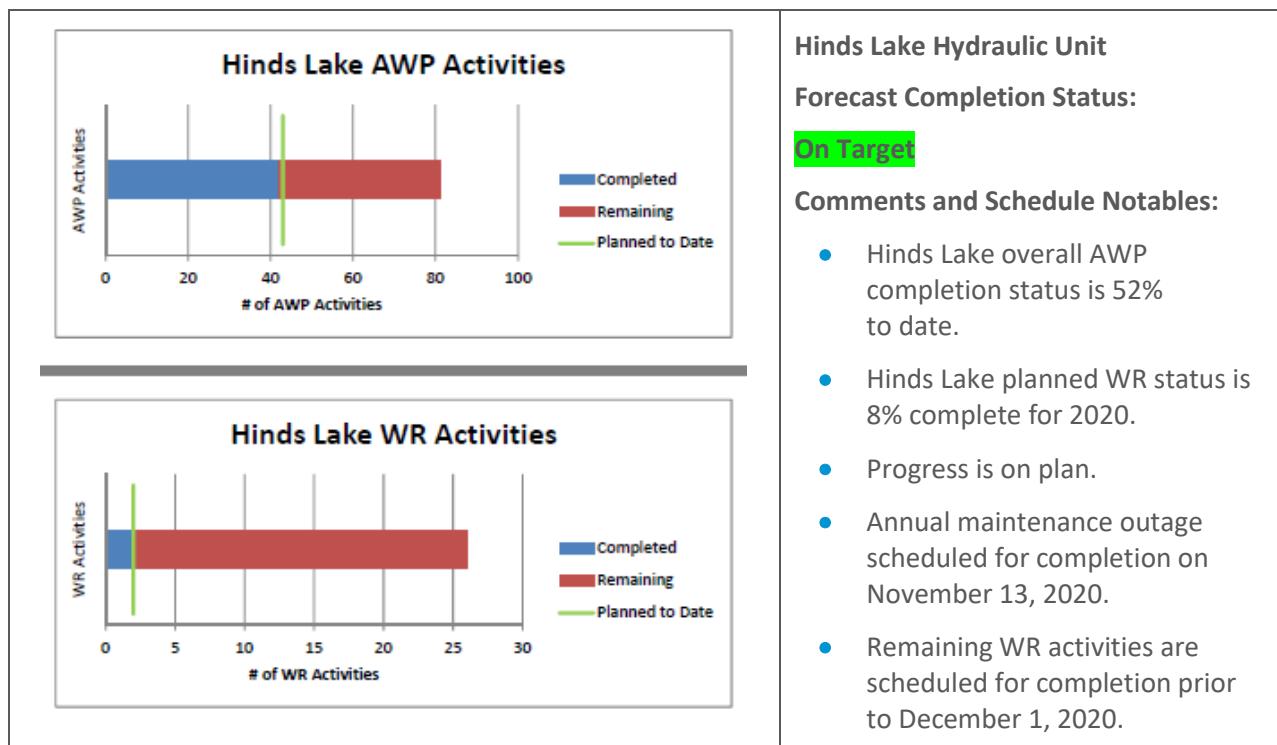
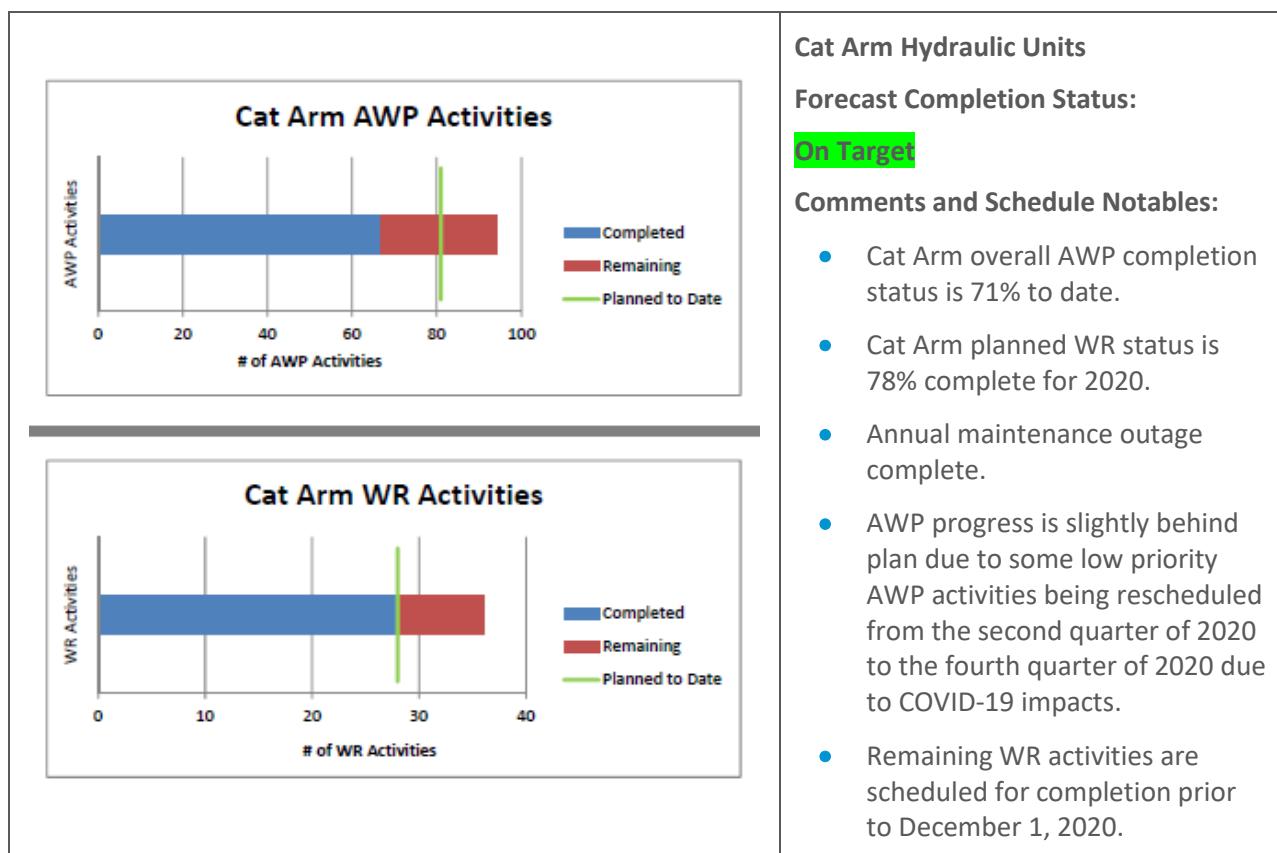
<p>Hardwoods GT AWP Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>~45</td> </tr> <tr> <td>Remaining</td> <td>~15</td> </tr> <tr> <td>Planned to Date</td> <td>~50</td> </tr> </tbody> </table>	Category	Value	Completed	~45	Remaining	~15	Planned to Date	~50	<p>Hardwoods Gas Turbine</p> <p>Forecast Completion Status:</p> <p>On Target!</p> <p>Comments and Schedule Notables:</p> <ul style="list-style-type: none"> Hardwoods Gas Turbine overall AWP completion status is 73% to date. Hardwoods Gas Turbine planned WR status is 54% complete for 2020. The fall maintenance outage has commenced and is scheduled for completion on October 10, 2020. Remaining WR activities are scheduled for completion prior to December 1, 2020.
Category	Value								
Completed	~45								
Remaining	~15								
Planned to Date	~50								
<p>Hardwoods GT WR Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>~15</td> </tr> <tr> <td>Remaining</td> <td>~15</td> </tr> <tr> <td>Planned to Date</td> <td>~15</td> </tr> </tbody> </table>	Category	Value	Completed	~15	Remaining	~15	Planned to Date	~15	
Category	Value								
Completed	~15								
Remaining	~15								
Planned to Date	~15								
<p>Stephenville GT AWP Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>~60</td> </tr> <tr> <td>Remaining</td> <td>~10</td> </tr> <tr> <td>Planned to Date</td> <td>~65</td> </tr> </tbody> </table>	Category	Value	Completed	~60	Remaining	~10	Planned to Date	~65	<p>Stephenville Gas Turbine</p> <p>Forecast Completion Status:</p> <p>On Target!</p> <p>Comments and Schedule Notables:</p> <ul style="list-style-type: none"> Stephenville Gas Turbine overall AWP completion status is 80% to date. Stephenville Gas Turbine planned WR status is 55% complete for 2020. Both AWP and WR activity completion status are slightly behind plan. The fall maintenance outage is scheduled to commence October 25, 2020. Remaining WR activities are scheduled for completion prior to December 1, 2020.
Category	Value								
Completed	~60								
Remaining	~10								
Planned to Date	~65								
<p>Stephenville GT WR Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>~15</td> </tr> <tr> <td>Remaining</td> <td>~15</td> </tr> <tr> <td>Planned to Date</td> <td>~15</td> </tr> </tbody> </table>	Category	Value	Completed	~15	Remaining	~15	Planned to Date	~15	
Category	Value								
Completed	~15								
Remaining	~15								
Planned to Date	~15								

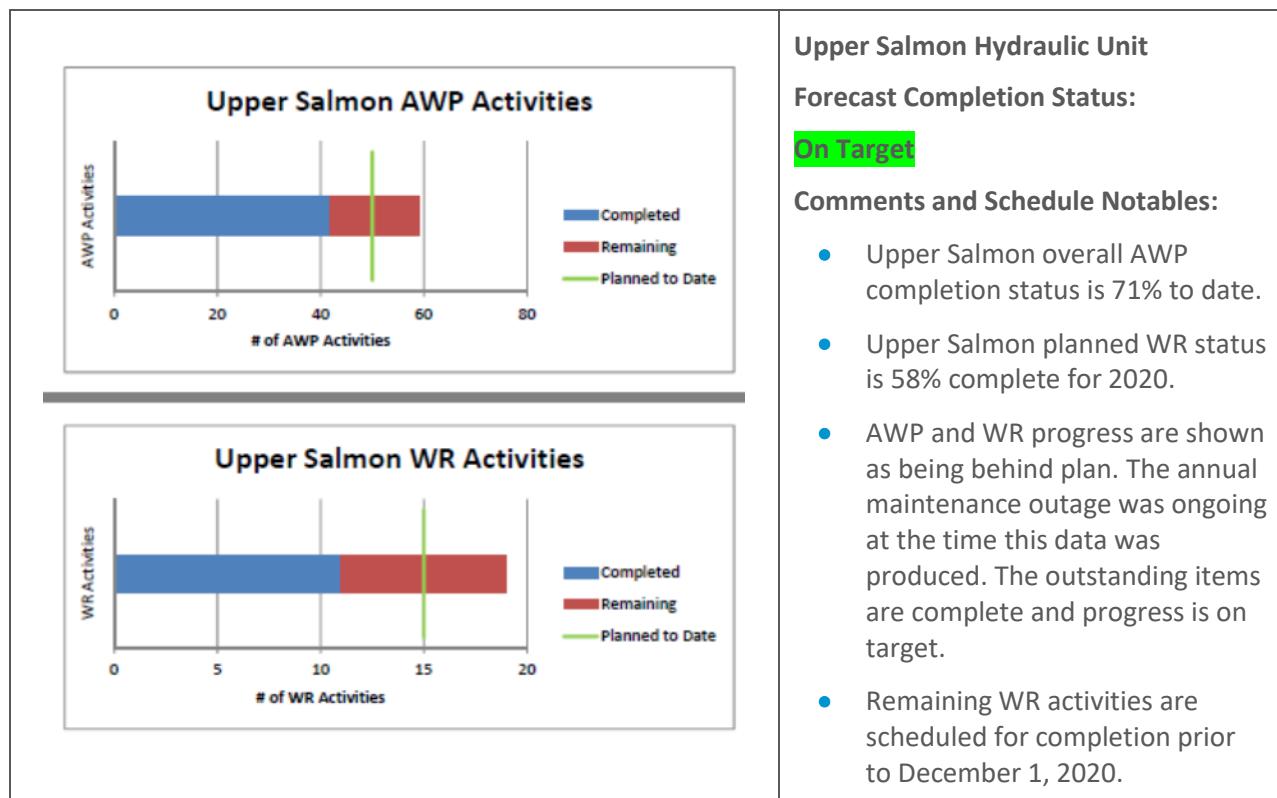
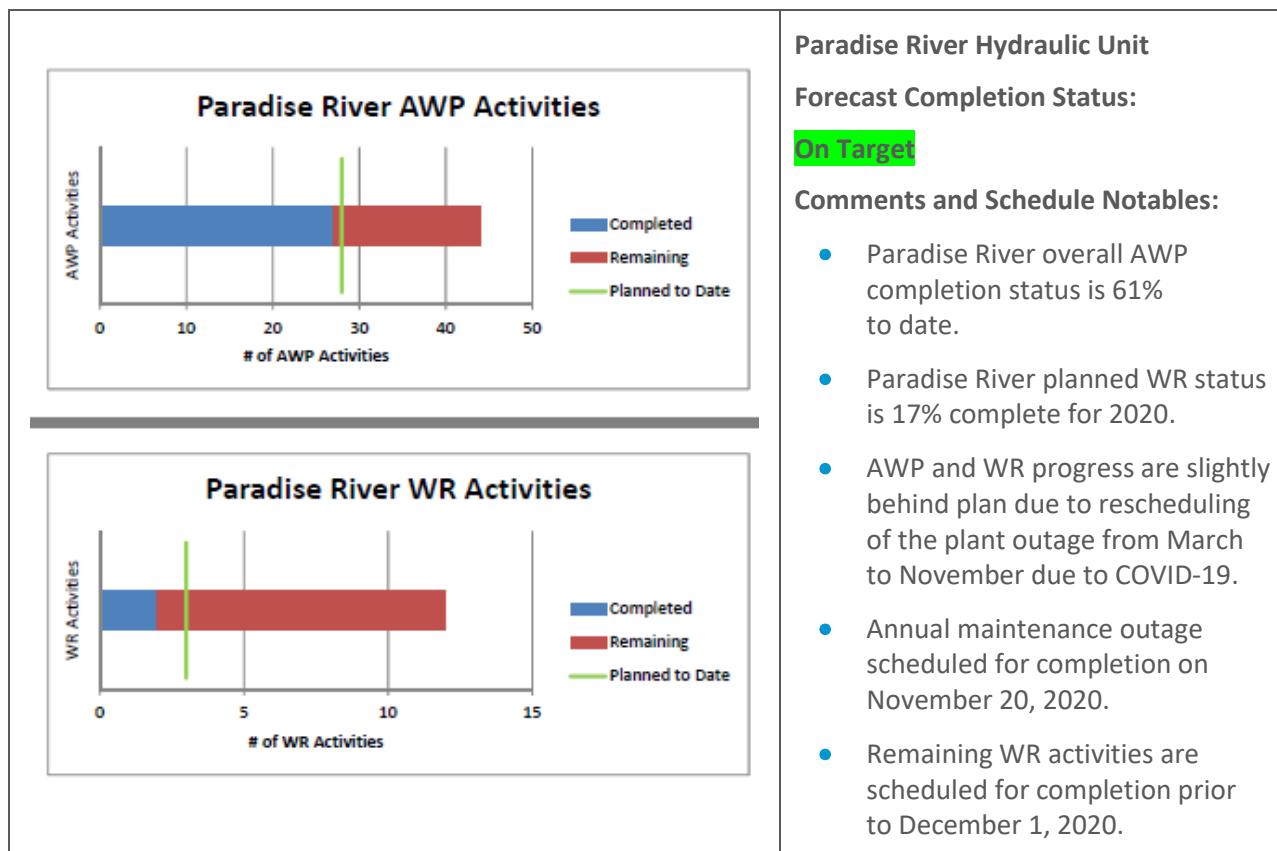


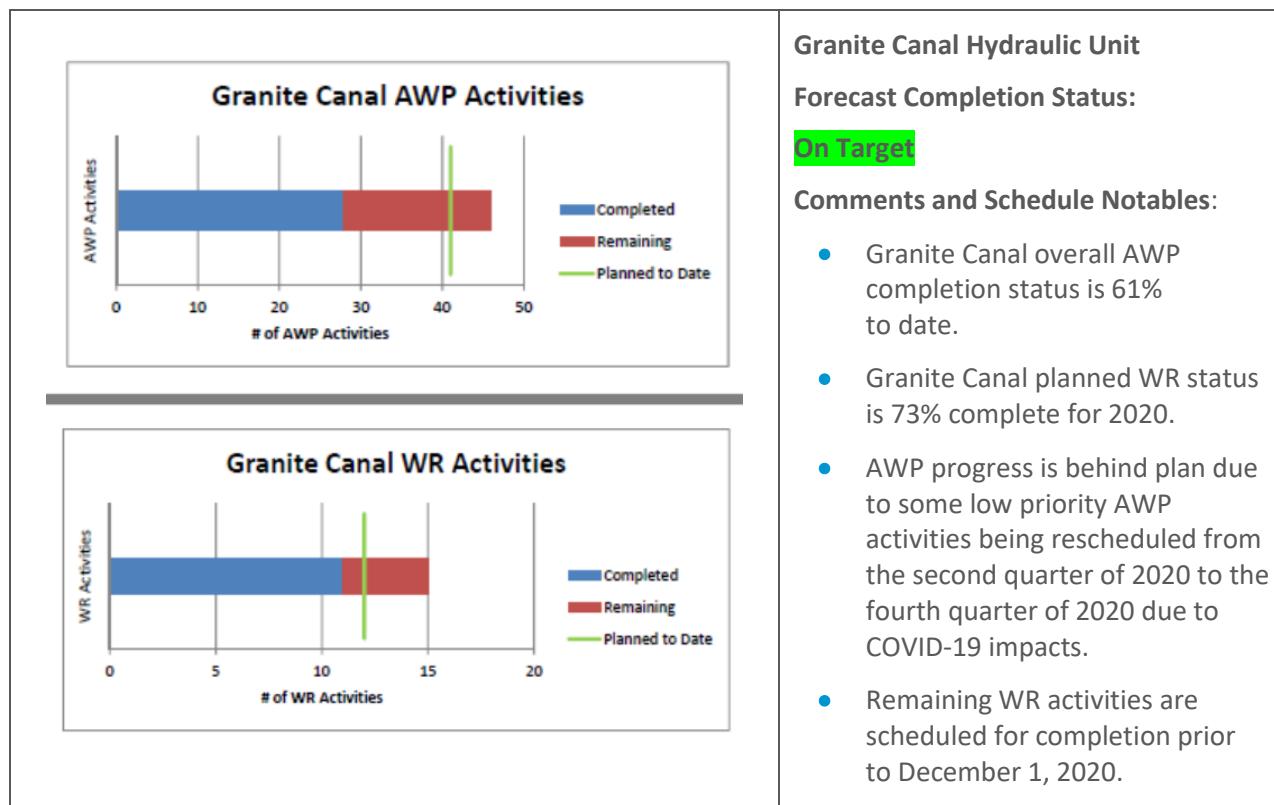
2.4 Hydraulic Generation

The current status of AWP and WR execution at Bay d'Espoir and other hydraulic generation facilities is summarized in the charts below. The onset of the COVID-19 pandemic resulted in some low priority work and several maintenance outages being rescheduled after the 2020 plan was established as noted in the comments below. Planned WR work for all hydraulic generation facilities is on target for completion by December 1, 2020.



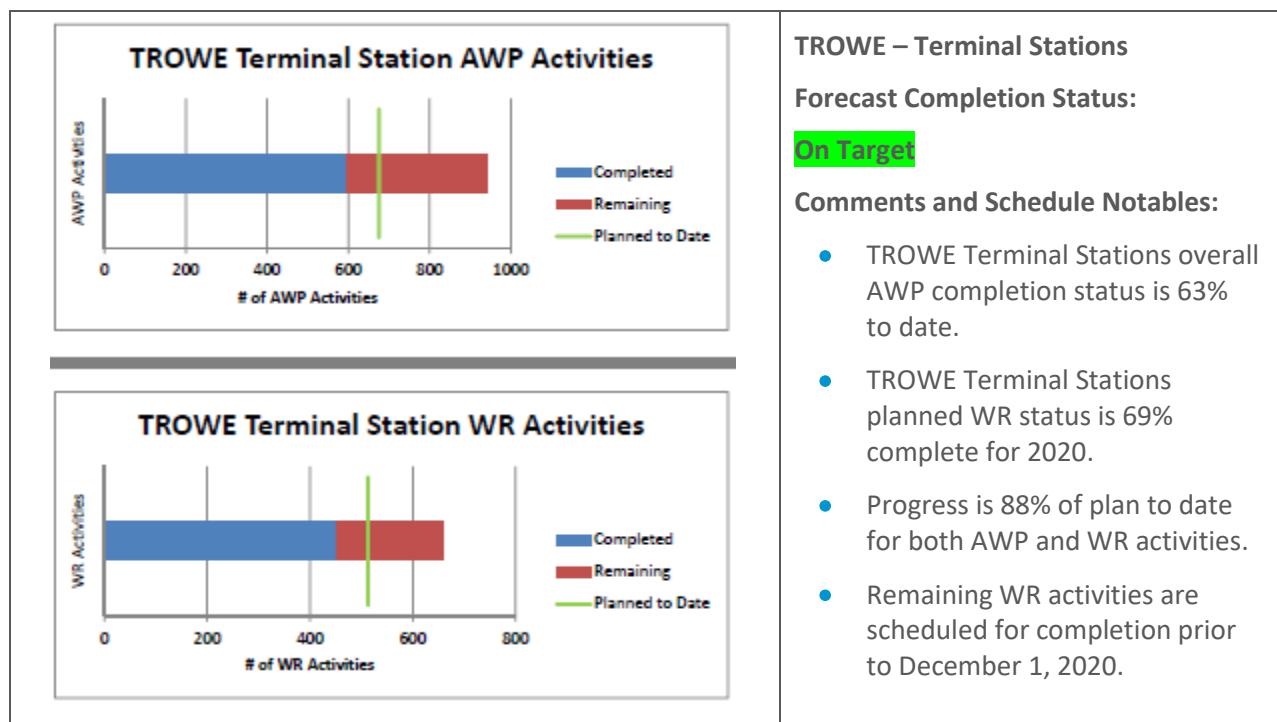
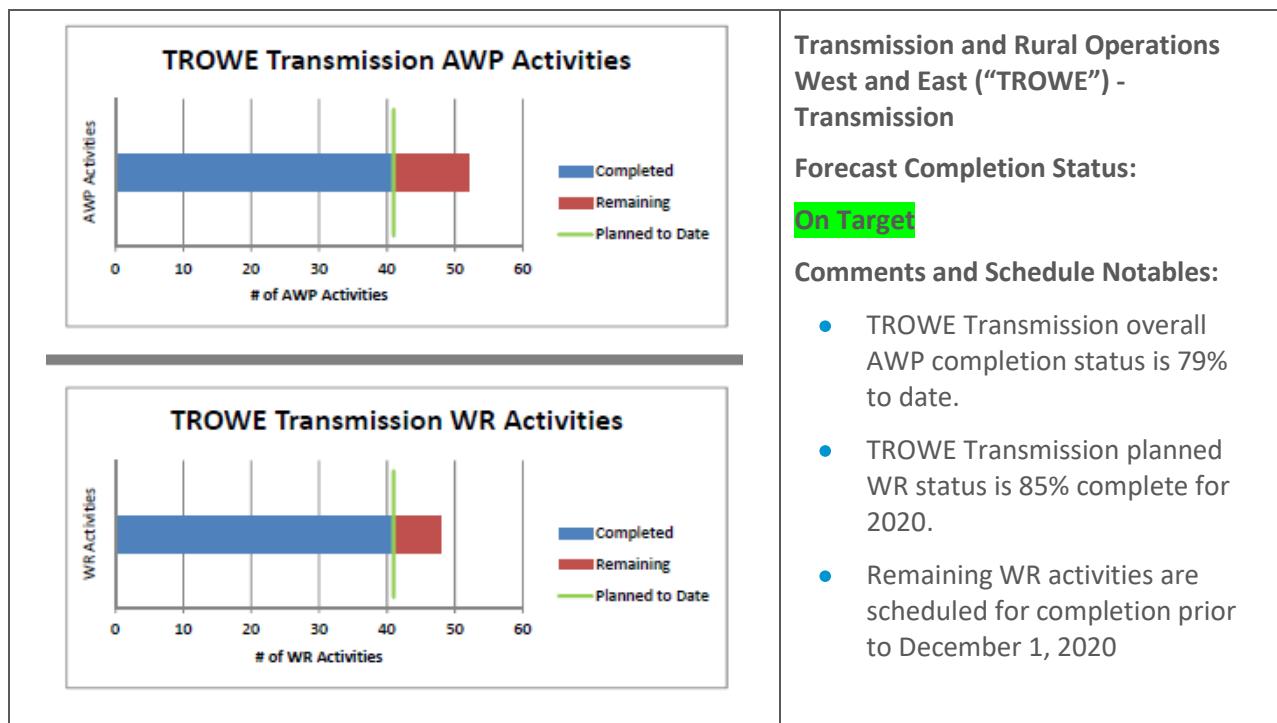


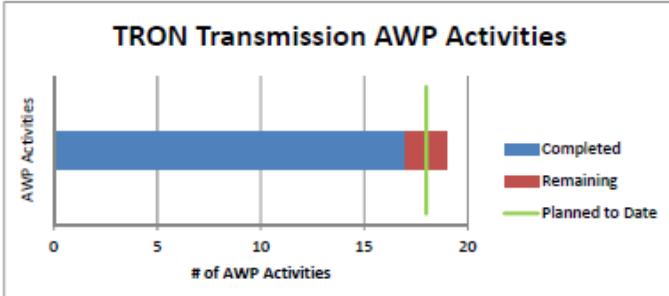
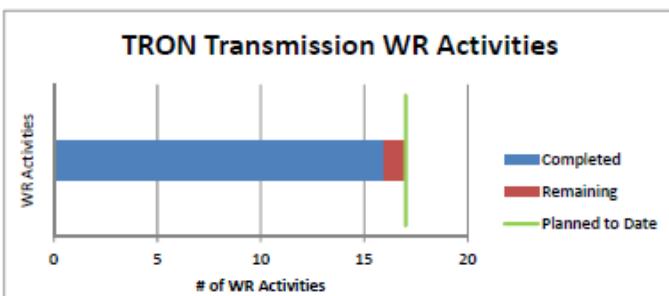


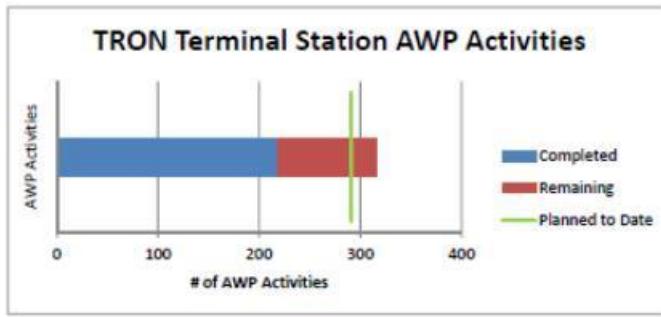
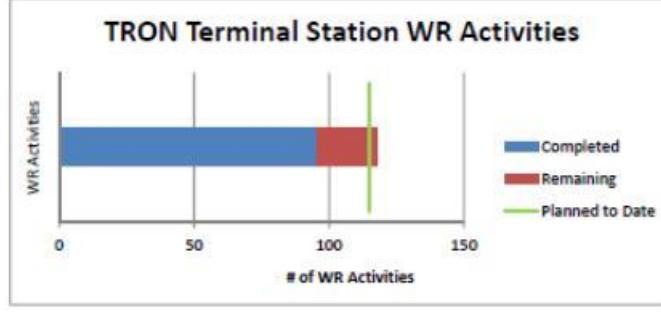


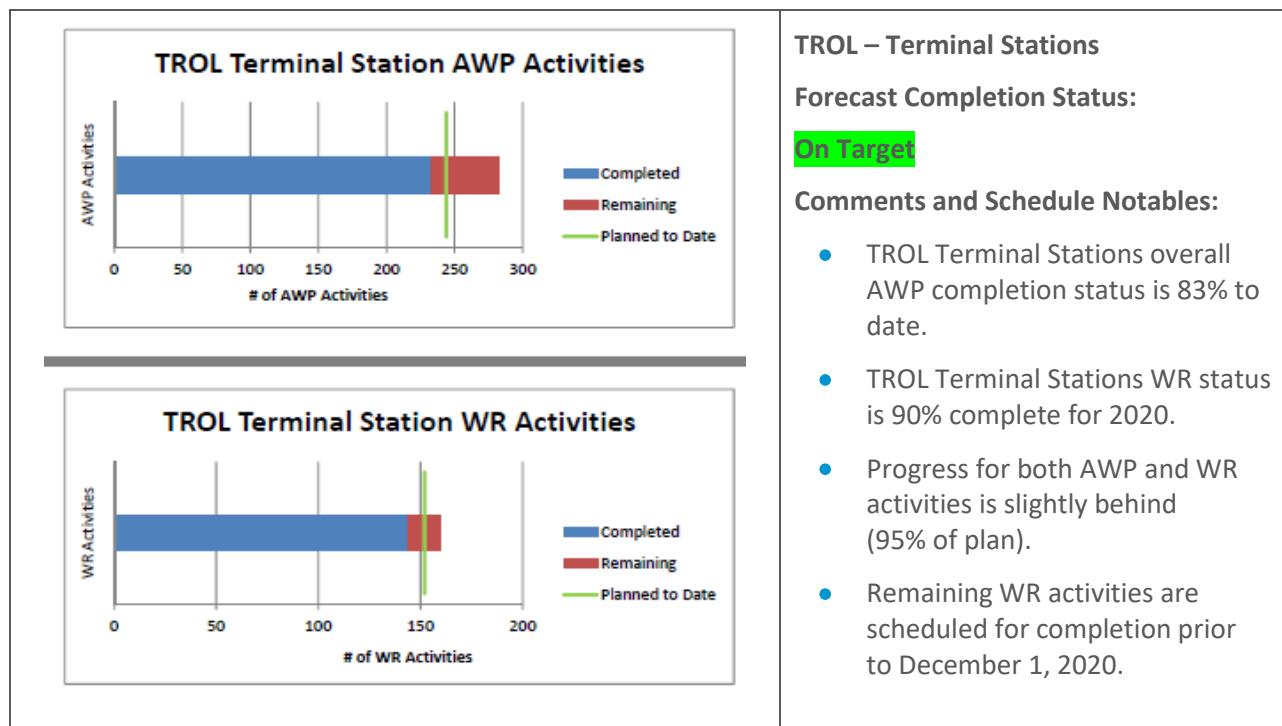
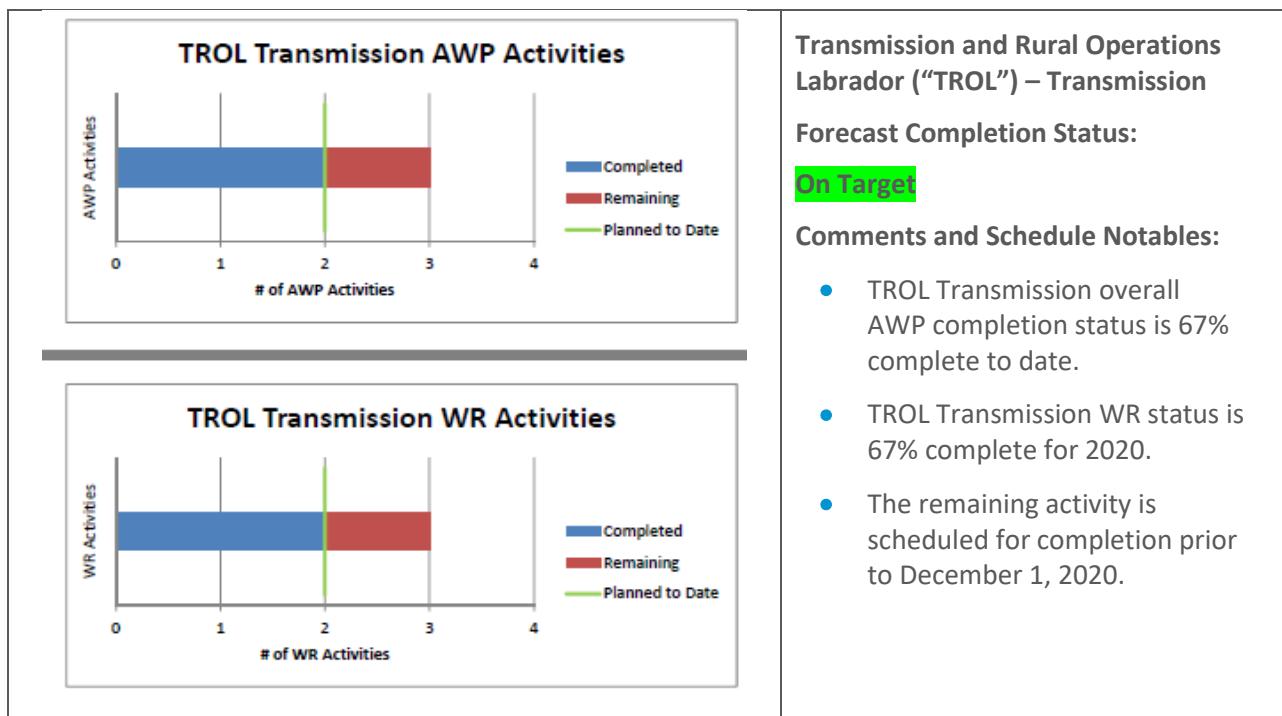
1 2.5 Transmission and Terminal Stations

2 The current status of AWP and WR execution for transmission line and terminal station facilities on both
 3 the Island Interconnected System and the Labrador Interconnected System is summarized in the charts
 4 below. Completion of terminal station work on the Island is behind plan, primarily due to changes made
 5 to outage schedules; however, there are no concerns with completion of work on target.



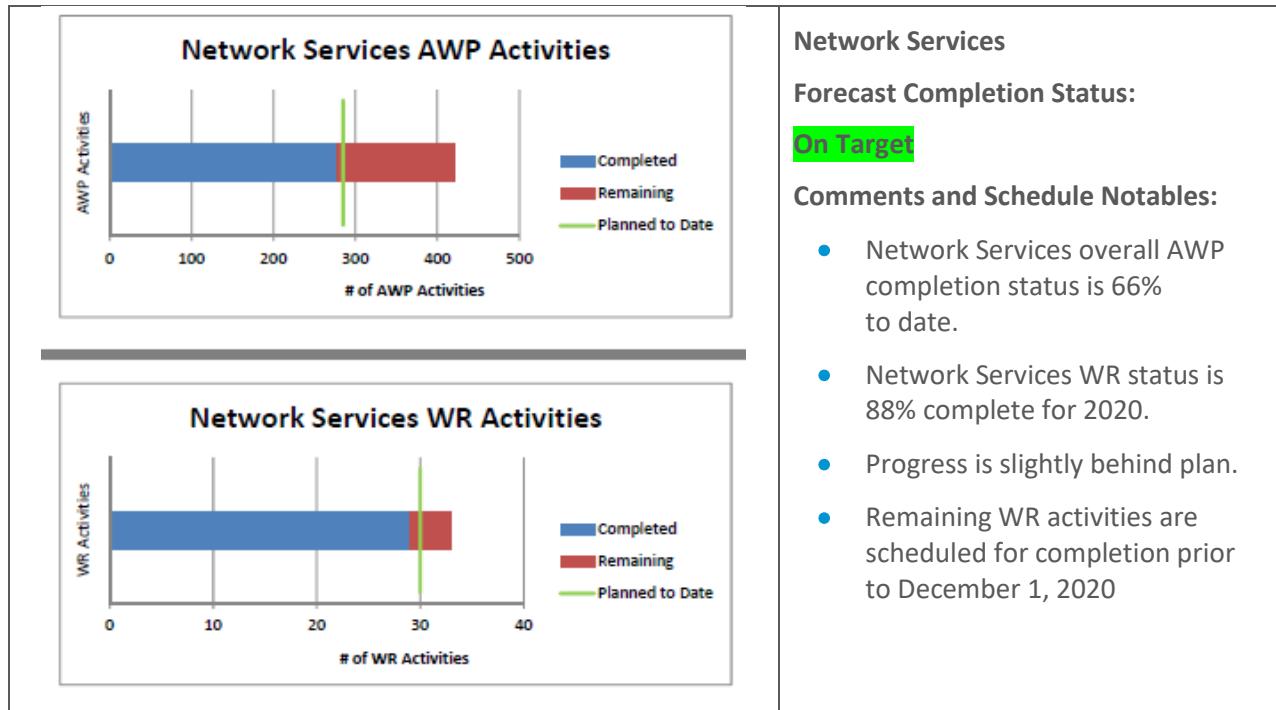
 <p>TRON Transmission AWP Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>18</td> </tr> <tr> <td>Remaining</td> <td>1</td> </tr> <tr> <td>Planned to Date</td> <td>1</td> </tr> </tbody> </table>  <p>TRON Transmission WR Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>16</td> </tr> <tr> <td>Remaining</td> <td>1</td> </tr> <tr> <td>Planned to Date</td> <td>1</td> </tr> </tbody> </table>	Category	Count	Completed	18	Remaining	1	Planned to Date	1	Category	Count	Completed	16	Remaining	1	Planned to Date	1	<p>Transmission and Rural Operations Northern (“TRON”) – Transmission</p> <p>Forecast Completion Status:</p> <p>On Target</p> <p>Comments and Schedule Notables:</p> <ul style="list-style-type: none"> • TRON Transmission overall AWP completion status is 90% to date. • TRON Transmission WR status is 94% complete for 2020. • Progress is slightly behind plan. • Remaining operations and maintenance activities are scheduled for completion prior to year end. • The remaining WR activity was completed on October 2, 2020.
Category	Count																
Completed	18																
Remaining	1																
Planned to Date	1																
Category	Count																
Completed	16																
Remaining	1																
Planned to Date	1																

 <p>TRON Terminal Station AWP Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>220</td> </tr> <tr> <td>Remaining</td> <td>80</td> </tr> <tr> <td>Planned to Date</td> <td>100</td> </tr> </tbody> </table>  <p>TRON Terminal Station WR Activities</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Completed</td> <td>85</td> </tr> <tr> <td>Remaining</td> <td>15</td> </tr> <tr> <td>Planned to Date</td> <td>10</td> </tr> </tbody> </table>	Category	Count	Completed	220	Remaining	80	Planned to Date	100	Category	Count	Completed	85	Remaining	15	Planned to Date	10	<p>TRON – Terminal Station</p> <p>Forecast Completion Status:</p> <p>On Target</p> <p>Comments and Schedule Notables:</p> <ul style="list-style-type: none"> • TRON Terminal Stations overall AWP completion status is 69% to date. • TRON Terminal Stations WR status is 81% complete for 2020. • Progress is 75% and 83% of plan to date for AWP and WR activities, respectively. • Changes to outage schedules are the primary reason for progress being behind plan. There are no concerns regarding completion of work at this time. • Remaining WR activities are scheduled for completion prior to December 1, 2020.
Category	Count																
Completed	220																
Remaining	80																
Planned to Date	100																
Category	Count																
Completed	85																
Remaining	15																
Planned to Date	10																



1 2.6 Network Services

- 2 The current status of AWP and WR execution for Network Services is summarized in the charts below.
- 3 All planned WR activities are scheduled for completion by December 1, 2020.



4 3.0 Status of Winter Readiness for Capital Projects

- 5 Appendix A of this report provides the status of 2020 planned capital projects that include scope related
6 to 2020–2021 WR for the Island Interconnected System and the Labrador Interconnect System. Table 1
7 summarizes the status of the WR scope of these projects by asset category.

Table 1: Status of Capital Projects with WR Scope

Asset Category	Complete as of October 1, 2020	Incomplete, Expected Completion by December 1, 2020	Incomplete, Expected Completion after December 1, 2020	Total
Hydraulic Generation	2	0	0	2
Thermal Generation	0	4	0	4
Gas Turbine Generation	0	0	0	0
Terminal Stations	0	0	0	0
Transmission	0	0	0	0
Total	2	4	0	6

1 As of October 1, 2020, the WR scope for two of the six capital projects is complete. The WR scopes for
2 the remaining four projects (Holyrood supplemental projects) are expected to be completed by
3 November 12, 2020. For details on the status of these remaining four projects please see the monthly
4 update provided in Appendix H.²

5 **4.0 Plant and Equipment Testing**

6 To ensure WR, Hydro follows a structured checklist for planning and documenting its testing and
7 inspection of plant and equipment in its thermal and hydroelectric generation facilities, as provided in
8 Appendix B and C, respectively.

9 In its transmission, terminal station, network services, and gas turbine operations, Hydro relies on its
10 AWP process to plan and track its WR testing and inspection of these assets. The AWPs in these areas
11 include planned PM activities and CM items both of which involve inspection and testing. Planned PMs
12 and CMs, and any other activities pertaining to WR, are flagged inside the respective AWPs and may be
13 tracked separately from other AWP items that are not WR related.

14 **4.1 Thermal Generation**

15 WR testing of generating equipment in Thermal Generation is focused primarily around annual unit
16 maintenance outages. Following these annual outages, units are run up and synchronized and all
17 systems are verified before the unit's operating status is determined and preparedness is confirmed.
18 Unit load tests are performed at this time as well. It can take a period of time for system conditions to
19 allow for all required load testing. The WR testing protocol includes the testing of appropriate Balance of
20 Plant components, including the black start diesel generators.³

21 The current status of equipment/plant testing for Thermal Generation is indicated in Appendix B of this
22 report. Consistent with the generation outage schedule shown in Appendix D, units have not yet been
23 returned to service for the winter operating season although Unit 1 was briefly run at 70 MW from
24 September 1 to September 2, 2020 and most of the start-up checks for that unit and balance of plant
25 equipment were completed at that time.

² "Holyrood Supplemental Capital Projects – Monthly Update" as per Board Order P.U. 14(2020).

³ The black start diesel generators are run up to speed and synchronized on a weekly basis to confirm their availability. The function of all associated breakers are also tested and confirmed.

4.2 Gas Turbine Generation

Examples of WR activities that are included in the AWP work scopes and maintenance plans for the Holyrood, Hardwoods, Stephenville, and Happy Valley Gas Turbines include the following:

- PMs and CMs for major components and auxiliary systems;
- Black start testing;
- Monthly operational testing; and
- Execution of capital upgrades and refurbishment.

AWP charts, which include WR activities, are shown in Section 2.2 of this report. Black start testing has been completed at the Happy Valley and Holyrood Gas Turbines. The planned black start test for Hardwoods and Stephenville Gas Turbines is anticipated to be completed before December 1, 2020.

Operational testing of all gas turbines has been carried out throughout the year as planned.

4.3 Hydraulic Generation

WR testing of generating equipment in Hydraulic Generation is focused primarily around annual unit maintenance outages. Following these annual outages, units are run up and synchronized and all systems are verified before the unit's operating status is determined and preparedness is confirmed. Unit load tests are also performed at this time. The WR testing protocol includes the testing of appropriate Balance of Plant components.

The current status of equipment/plant testing for Hydraulic Generation is indicated in Appendix C of this report. All inspection and testing of the hydraulic generation facilities is scheduled to be completed by December 1, 2020.

4.4 Transmission and Terminal Stations

4.4.1 Transmission

The summary of maintenance, refurbishment, and replacement criteria that Hydro uses for its transmission lines was included in the “Transmission and Terminal Station Asset Management Execution

1 Report.”⁴ The report includes criteria for Wood Pole and Steel Structure Line Management Programs,
2 helicopter patrols, ground patrols, infrared inspections, wood pole treatment, and right-of-way
3 maintenance.

4 **4.4.2 Terminal Stations**

5 The “Terminal Station Asset Management Overview” document includes the maintenance,
6 refurbishment, and replacement criteria used by Hydro for Terminal Station assets. Version 5 of this
7 document was included in the Terminal Station Refurbishment and Modernization project report in
8 Hydro’s “2021 Capital Budget Application.”⁵

9 Since August 2018, Hydro has experienced four circuit breaker failures at the Bay d’Espoir terminal
10 station. Refer to Section 8 for commentary.

11 **4.4.3 Transmission and Terminal Station Testing**

12 The AWPs for both Transmission and Terminal Stations are predominantly comprised of PMs and CMs,
13 which inherently involve inspection and testing. Examples of WR activities that are included in the AWP
14 work scopes include the following:

- 15 ● Transformer PMs and CMs;
16 ● Annual exercises on all high voltage circuit breakers;
17 ● Exercise of 230 kV circuit breakers from protection during PM inspections;
18 ● Infrared scans at all terminal stations;
19 ● Annual ultrasonic leak testing on all terminal station air systems; and
20 ● Annual helicopter patrol of transmission lines prior to the winter season.

21 AWP charts, which include WR activities, are shown in Section 2.4 of this report. All WR activities are
22 planned for completion by December 1, 2020.

⁴ “Transmission System and Terminal Station Asset Management Execution Report,” Newfoundland and Labrador Hydro, May 11, 2020.

⁵ “2021 Capital Budget Application,” Newfoundland and Labrador Hydro, rev 1, August 7, 2020 (originally filed on August 4, 2020), vol II, tab 9.

4.5 Network Services

The AWP for Network Services is comprised of PMs and CMs which inherently involve inspection and testing of various assets and systems. AWP charts, which include WR activities, are shown in Section 2.5 of this report. All WR activities are planned for completion by December 1, 2020.

5.0 Generation Outage Schedule

Hydro's 2020 Master Generation Outage Schedule for the period September 1 to December 31, 2020 is attached to this report as Appendix D.

There are no planned outages of generation equipment extending beyond December 1, 2020.

6.0 Critical Spares

6.1 Overview

In 2014, Hydro completed extensive reviews of its critical spares requirements in all three areas of its generation operations: hydraulic generation; thermal generation (Holyrood TGS); and the gas turbines in Hardwoods and Stephenville. These reviews included a detailed analysis of asset criticality and spare parts in reference to several factors, including impact on generation reliability and replacement part availability. A second phase of spares analysis was completed in 2017 for Hydro's hydraulic generation facilities and 569 additional items were added to the critical spares list.

Hydro's evaluation of critical spares is an ongoing process with consideration given to asset condition, level of criticality, parts availability/order lead time, and cost. In some cases, a balanced consideration of these factors may result in a decision to not procure a part into inventory where the risk to reliability is judged to be low and/or other measures are available to mitigate against generation unavailability.

Included in this report is a full update on the status of Hydro's critical spares, as of September 30, 2020, for the 2020–2021 winter season. This update includes a detailed listing of critical spares requirements for each area of generation operations and the status of each item.

6.2 2020–2021 Winter Season

Hydro's critical spares status leading into the 2020–2021 winter season is strong. For Thermal Generation (Appendix E), Gas Turbines (Appendix F), and Hydro Generation (Appendix G), a total of 2,461 critical spares have been identified by Hydro's three generation operations areas. Of this total,

1 2,435 items are in stock (99%), 17 items are on order and the remaining 9 items are in the procurement
 2 process or will be ordered as soon as the specification and part numbers are confirmed.

3 **6.2.1 Thermal Generation**

4 As summarized in Table 2, there are eight critical spare stock items currently not in stock. All of these
 5 items are on order through Hydro's Supply Chain Department and are in varying stages of the
 6 procurement process. One part is expected to be on site by the end of October 2020 while another is
 7 past the expected delivery date. Supply Chain is following up on the overdue part and an update on this
 8 and all of the other outstanding parts will be included in the November 10, 2020 WR report.

9 The complete list of critical spares for Holyrood TGS is provided in Appendix E. Note that this list
 10 contains three Inventory Status descriptions: "In-Stock," "Non-Stock," and "On Order." "In-Stock" means
 11 that the part is in inventory, "Non-Stock" means that the part is critical but it is not necessary to keep it
 12 in stock (e.g., because the part is readily available locally), and "On Order" means that the part is
 13 required to be in-stock but is not. For the "Non-Stock" parts, an explanation of the reason why it is
 14 "Non-Stock" is provided in the "Notes" column in Appendix E.

Table 2: Critical Spares for Thermal Generation

Critical Spare Items	Quantity
In Stock	750
On Order	8
Not Yet On Order	0
Total	758

15 **6.2.2 Gas Turbines**

16 Table 3 summarizes the status of spare parts for the Hardwoods, Stephenville and Holyrood Gas
 17 Turbines and Appendix F contains detailed lists for each gas turbine.

Table 3: Critical Spares for Gas Turbine Generation

Critical Spare Items	Hardwoods/Stephenville	Holyrood	Total
In Stock	82	396	478 (96.8%)
On Order	6	1	7 (1.4%)
Not Yet On Order	1	8	9 (1.8%)
Total	89	405	494

- 1 The spares list for the Hardwoods and Stephenville Gas Turbines is detailed in Appendix F and contains
 2 the critical spares identified for these units. This list contains 89 critical spare parts. Approximately 92%
 3 (82) of these spares are in-stock. Of the remainder, 6 are on order and 1 requires additional engineering
 4 prior to procurement.
- 5 The spares list for the Holyrood Gas Turbine is also detailed in Appendix F and includes the critical spares
 6 for this unit. This list contains 405 critical items. Greater than 97% (396) of these spares are in-stock. Of
 7 the remainder, 1 is on order and 8 are not yet on order.
- 8 Items that are not yet ordered and require further engineering need original equipment manufacturer
 9 input due to changes in the technical specifications or changes in part numbers related to these
 10 components. These items are actively being ordered as the specification and part numbers for these
 11 parts are determined.
- 12 Hydro has utilized a number of its spare parts to address deficiencies found during the 2020
 13 maintenance season. These items have been identified and are currently on order or in the procurement
 14 process. Fall maintenance outages may result in the requirement to replenish additional spare
 15 components.

16 **6.2.3 Hydraulic Generation**

17 Table 4 provides an overview of the critical spares program for Hydro Generation and Appendix G
 18 contains detailed spares lists for the various facilities.

Table 4: Critical Spares for Hydraulic Generation

Critical Spare Items	Quantity
In Stock	1,207
On Order	2
Not Yet On Order	0
Total	1,209

- 19 The two outstanding items are spare potential transformers for Cat Arm and Granite Canal. Both items
 20 have been ordered and are expected to be delivered by November 30, 2020.

7.0 Near-Term Reliability and Resource Adequacy

This section discusses the near-term reliability and resource adequacy of the Newfoundland and Labrador Interconnected System for the upcoming winter period. It provides a summary of the analysis presented in Hydro's "Near-Term Reliability Report."⁶

The reliability indices in this near-term report include both annual and monthly Loss of Load Hours ("LOLH"), Expected Unserved Energy ("EUE"), and Normalized EUE⁷ for the period of October 1, 2020 to December 31, 2021. The analysis considers the different types of generating units (i.e., thermal, hydro, and wind) in Hydro's fleet, contractual sales, transmission constraints, peak load, load forecast uncertainty, and capacity assistance programs. Similar to previous analyses, a range of projected availabilities was considered for the Holyrood TGS. A detailed discussion of the modelling approach used can be found in Hydro's "Near-Term Reliability Report."

Hydro intends to file an update of its assessment of near-term reliability and resource adequacy by November 16, 2020.

7.1 Assumptions

7.1.1 Asset Performance

Hydro updates its assumptions for forced outage rates for all generation assets on an annual basis.⁸ Forced outage rates used in this analysis are presented in Table 5.

⁶ "Near-Term Reliability Report," Newfoundland and Labrador Hydro, May 15, 2020.

⁷ Normalized EUE provides a measure relative to the size of the assessment area. It is defined as: [(Expected Unserved Energy)/(Net Energy for Load)] x 1,000,000 with the measure of per unit parts per million.

⁸ Forced outage rates are updated consistent with the Forced Outage Rates Methodology presented in "Reliability and Resource Adequacy Study – 2019 Update," Newfoundland and Labrador Hydro, November 15, 2019.

Table 5: Forced Outage Rates for Hydro-Owned Assets

Asset	Reliability Metric
Hydraulic Units	DAFOR ⁹ = 2.8%
Holyrood Thermal Units – Base Assumption	DAFOR = 15%
Holyrood Thermal Units – Sensitivity Assumptions	DAFOR = 18%, 20%
Holyrood Gas Turbine	DAUFOP ¹⁰ = 1.7%
Happy Valley Gas Turbine	DAUFOP = 9.8%
Stephenville Gas Turbine	DAUFOP = 30%
Hardwoods Gas Turbine	DAUFOP = 30%
Diesels	DAUFOP = 6.2%

- 1 For units not owned by Hydro, the forced outage rates used in Hydro's modelling are determined using
 2 industry averages.¹¹ Forced outage rates used in this analysis are presented in Table 6.

Table 6: Forced Outage Rates - Third-party Owned Assets

Asset	Reliability Metric
Hydraulic Units	DAFOR = 5.7%
Gas Turbines	DAUFOP = 13.6%
Corner Brook Cogen	DAUFOP = 15.8%

- 3 **7.1.2 Labrador-Island Link Assumptions**
 4 In correspondence dated March 5, 2020 the Board requested that Hydro incorporate a Labrador-Island
 5 Link ("LIL") outage until June 1, 2021 into its base assumptions. Hydro has performed its analysis
 6 assuming that the LIL is unavailable until June 1, 2021 in all cases.
 7 With respect to the LIL, once modelled as in service the forced outage rate is modelled with a declining
 8 forced outage rate in order to capture any testing activities and potential operational unknowns during
 9 the first years of operation.¹²
- 10 **7.1.3 Availability of Capacity Assistance Agreements**
 11 Capacity assistance refers to curtailable loads and customer generation available to the utility under
 12 contract to provide capacity on an as needed basis. Hydro currently has an agreement with Corner

⁹ Derated Adjusted Forced Outage Rate ("DAFOR").

¹⁰ Derated Adjusted Utilization Forced Outage Probability ("DAUFOP").

¹¹ As provided in the CEA Generating Equipment Reliability Information System and the NERC Generating Availability Data System.

¹² In year 1 of operation, the monopole forced outage rate is assumed to be 10% for each pole. The forced outage rate assumption decreases to 2.5% in year 2, 1% in year 3, and finally to the long-term forced outage rate of 0.556% per pole from year 4 onwards.

1 Brook Pulp and Paper Limited for capacity assistance. The current agreement expires either on the
2 earlier of April 30, 2022 or the commissioning of the Muskrat Falls Generating Station, ensuring the
3 availability of this agreement to increase system reliability should the LIL be unavailable in either of the
4 2020–2021 or 2021–2022 winter operating seasons.

5 Since 2014, Hydro has engaged Vale through various agreements to provide capacity assistance from its
6 diesel generators. The most recent agreement provided capacity assistance through the 2019–2020
7 winter operating season and expired on March 31, 2020. Should the LIL be unavailable in either of the
8 2020–2021 or 2021–2022 winter operating seasons, Hydro would engage Vale with the intent to
9 undertake an agreement for capacity assistance for that winter. Hydro is in the process of determining
10 whether such an agreement is required for the 2020–2021 winter operating season and will advise the
11 Board.

12 **7.1.4 Availability of Maritime Link Imports**

13 The Maritime Link is expected to be available to import energy during the 2020–2021 winter operating
14 season. Since the in-service of the Maritime Link, Hydro has been successful in making economic
15 purchases to economically offset the requirement to produce additional thermal energy. From
16 September 2019 through March 2020, 311 GWh was imported over the Maritime Link through a
17 combination of monthly agreements, day-ahead commitments, and real-time transactions. During this
18 period, purchased energy was successfully delivered in more than 95% of scheduled hours offsetting
19 higher cost thermal generation. While all of the market purchases to date have been made on an
20 economic basis, these purchases have also provided system reliability benefits by reducing the
21 requirement to operate Holyrood TGS and standby generation.

22 Hydro can also purchase energy and capacity for economic reasons by doing short-term transactions or
23 by making larger, longer term commitments. Therefore, import scenarios are contemplated as
24 sensitivities to cases considered in this report. Hydro modelled firm imports of 50 MW and 100 MW
25 from December 2020 to March 2021 with an associated forced outage rate intended to serve as proxy
26 for anticipated potential interruptions to the import. Since the availability of these contracts depends on
27 the availability of capacity from a third party to provide firm capacity, there is no guarantee that these
28 contracts would be available. The analysis demonstrates the effect on the system if the capacity was
29 available in the requested amounts.

1 **7.2 System Energy Capability**

2 In order to reliably serve its customers, Hydro maintains minimum storage limits to ensure that it is
3 capable of meeting customer energy requirements. In the current system, these limits represent the
4 point at which Holyrood generation would be required to be maximized to ensure Hydro could continue
5 to meet customer requirements in consideration of the historical dry sequence. In early 2020, Hydro
6 established minimum storage limits to April 30, 2021 in consideration of potential delays in the
7 availability of the LIL to deliver energy to the Island Interconnected System. This will help ensure
8 sufficient storage to reliably serve customers should the LIL continue to be delayed beyond the winter of
9 2020–2021.

10 The targets do not consider the availability of imports, though imports can provide an additional
11 opportunity to supplement energy in storage and economically reduce the amount of thermal
12 generation required to maintain sufficient energy in storage. Imports on the Maritime Link and thermal
13 generation above minimum are available during the winter 2020–2021 operating season, if required.
14 Otherwise, imports will be used to offset thermal generation to the extent that it is economically and
15 technically feasible. At this point, Hydro does not foresee using production from standby generation to
16 support reservoir levels. With the availability of thermal energy and access to external markets to
17 provide the balance of load, the availability of energy in reservoir systems does not currently pose a risk
18 to near-term resource adequacy. Regular assessments of storage at a reservoir level basis are also
19 completed to ensure that each hydraulic generating unit remains capable of producing at full rated
20 output through the winter period.

21 As of September 30, 2020, Hydro's total system energy in storage was 1,751 GWh, 268 GWh above the
22 minimum storage limit of 1,483 GWh for September 2020. Figure 1 plots the 2019 and 2020 storage
23 levels, minimum storage limits, maximum operating level storage, and 20-year average aggregate
24 storage for comparison.

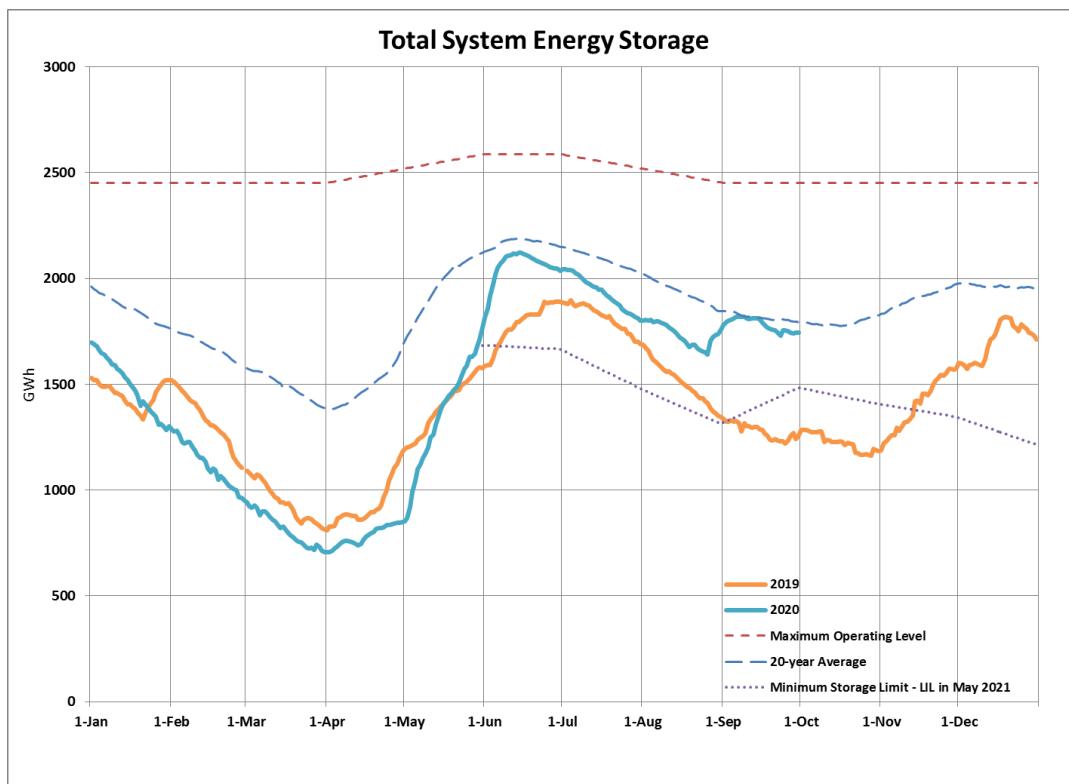


Figure 1: Total System Energy Storage for September 30, 2020

7.3 Load Forecast

- Customer load requirements in this analysis are consistent with those used in Hydro's May 2020 "Near-Term Reliability Report." The Island Interconnected System utility and industrial load requirements remain largely unchanged for the 2020–2021 winter operating season compared to the previous winter operating season and continue to reflect a mostly stagnant outlook for the provincial economy. The total Labrador Interconnected System Customer Coincident Demand forecast requirements have decreased by approximately 6.5%, following consultation with Hydro's Labrador Interconnected System Industrial customers. Details of Hydro's current forecasts for the 2020–2021 winter operating season are provided in Table 7 through Table 9.
- An update to Hydro's near-term load forecast will be provided in Hydro's Near-Term Reliability Report, anticipated to be filed by November 16, 2020.

Table 7: 2020–2021 Island Interconnected System Load Forecast

	MW
Utility Requirements	1,484
Industrial Customers	178
Island Interconnected System Customer Coincident Demand	1,662
Island Interconnected System Transmission Losses and Station Service Requirements	76
Total Island Interconnected System Requirements (P50)	1,738
P90 Demand Adjustment	60
Total Island Interconnected System Requirements (P90)	1,798

Table 8: 2020–2021 Labrador Interconnected System Load Forecast

	MW
Utility Requirements	143
Industrial Customers	277
Labrador Interconnected System Customer Coincident Demand	420
Labrador Interconnected System Transmission Losses and Station Service Requirements	26
Total Labrador Interconnected System Requirements	446

Table 9: 2020–2021 Newfoundland and Labrador Interconnected System Load Forecast

	MW
Newfoundland and Labrador Interconnected System Customer Coincident Demand	2,063
Newfoundland and Labrador Interconnected System Transmission Losses and Station Service Requirements	101
Total Newfoundland and Labrador Interconnected System Requirements	2,164
Island Interconnected System P90 Demand Adjustment	60
Total Newfoundland and Labrador Interconnected System Requirements (including Island Interconnected System P90 Demand Adjustment)	2,224

7.4 Scenarios Considered and Results

The following subsections provide a description of the five scenarios considered for winter 2020–2021, and the anticipated system reliability in each case (i.e., LOLH, EU, and normalized EU results).

7.4.1 Scenarios

Five scenarios were analyzed to assess system reliability under a range of potential system conditions.

- **Scenario 1:** Assumes that the LIL will be available at full capacity on June 1, 2021. This case assumes a DAFOR of 15% for the Holyrood TGS and the continued in-service of the Hardwoods

1 and Stephenville Gas Turbines through the 2020–2021 winter operating season. No LIL deliveries
2 are contemplated in advance of June 1, 2021.

- 3 ● **Scenario 2:** Varies from Scenario 1 by increasing the Holyrood TGS DAFOR to 18%.
- 4 ● **Scenario 3:** Varies from Scenario 1 by increasing the Holyrood TGS DAFOR to 20%.
- 5 ● **Scenario 7:** Varies from Scenario 3 by including 50 MW of imports all hours during the winter
6 season.
- 7 ● **Scenario 8:** Varies from Scenario 3 by including 100 MW of imports all hours during the winter
8 season.

9 **7.4.2 Expected Unserved Energy and Loss of Load Hours Analysis**

10 **Annual Assessment Results**

11 Table 10 provides the annual LOLH, EUE and normalized EUE results. Note that the basis for comparison
12 of results is Hydro's existing LOLH criteria of not more than 2.8 hours per year. Hydro's intends to
13 migrate to its proposed criteria of 0.1 LOLE when the Muskrat Falls project has been fully commissioned
14 and thermal generation at Holyrood TGS, Hardwoods, and Stephenville have been retired.

15 Higher levels of LOLH and EUE are observed in all scenarios during 2021, resultant from the LIL being
16 unavailable during the winter operating season, with exposure increasing as Holyrood TGS unavailability
17 increases beyond 15%, as observed in the results of Scenarios 2 and 3. As demonstrated in Scenarios 4
18 and 5, imports over the Maritime Link could be used to mitigate the risk of generation shortfall. An
19 import of 100 MW in on-peak hours from December to March would be sufficient to reduce the risk of
20 generation shortfall to an acceptable level in the most onerous modelled scenario.

Table 10: Annual LOLH, EUE, and Normalized EUE Results

Reliability Metric	Oct–Dec 2020¹³	Jan–May 2021
LOLH (hours)		
Scenario 1: LIL 2021, Holyrood TGS DAFOR = 15%	0.66	2.44
Scenario 2: LIL 2021, Holyrood TGS DAFOR = 18%	0.92	3.77
Scenario 3: LIL 2021, Holyrood TGS DAFOR = 20%	1.19	4.8
Scenario 4: LIL 2021, Holyrood TGS DAFOR = 20%, 50 MW imports	0.71	2.67
Scenario 5: LIL 2021, Holyrood TGS DAFOR = 20%, 100 MW imports	0.41	1.43
EUE (MWh)	Oct–Dec 2020	Jan–May 2021
Scenario 1: LIL 2021, Holyrood TGS DAFOR = 15%	37	129
Scenario 2: LIL 2021, Holyrood TGS DAFOR = 18%	55	203
Scenario 3: LIL 2021, Holyrood TGS DAFOR = 20%	72	264
Scenario 4: LIL 2021, Holyrood TGS DAFOR = 20%, 50 MW imports	40	138
Scenario 5: LIL 2021, Holyrood TGS DAFOR = 20%, 100 MW imports	22	68
Normalized EUE (ppm)¹⁴	2020	2021
Scenario 1: LIL 2021, Holyrood TGS DAFOR = 15%	3.4	12.0
Scenario 2: LIL 2021, Holyrood TGS DAFOR = 18%	5.2	19.0
Scenario 3: LIL 2021, Holyrood TGS DAFOR = 20%	6.7	24.5
Scenario 4: LIL 2021, Holyrood TGS DAFOR = 20%, 50 MW imports	3.7	12.8
Scenario 5: LIL 2021, Holyrood TGS DAFOR = 20%, 100 MW imports	2.1	6.4

1 **Monthly Assessment Results**

2 Table 11 provides monthly analyses of LOLH and EUE, for each year by month. The monthly analyses
 3 provide additional detail that assists in examining the complexity of the changing power system that
 4 would not necessarily be apparent from an analysis of the annual results only. Completing monthly
 5 analyses allows for easier identification of changes in system behaviour. For example, if a system had a
 6 change in forecast peak demand with no resultant change in annual LOLH or EUE, the monthly analysis
 7 would indicate where differences in LOLH and EUE were anticipated, allowing for better understanding
 8 of the drivers of the annual results. This type of analysis is used by utilities regulated by North American
 9 Electric Reliability Corporation (“NERC”) to complement long-term reliability assessments.

10 High values of LOLH and EUE are observed in all scenarios during the winter months of 2021 with both
 11 LOLH and EUE growing as the Holyrood TGS unavailability increases. As seen in Scenarios 4 and 5, the
 12 import of firm energy over the Maritime Link produces a significant improvement in system reliability.

¹³ 2020 results from October 1, 2020 to December 31, 2020 only.

¹⁴ Normalized EUE is calculated on a full calendar year basis.

1 This demonstrates that firm imports could be used to mitigate the increased risk of resource shortfalls if
 2 the LIL is delayed or if the Holyrood TGS or other generating assets were to perform more poorly than
 3 expected.

4 It is important to note that, given the conservative nature of this analysis, it has been assumed that the
 5 LIL will not be available in advance of June 2021. If the LIL is available, even at the level of availability
 6 experienced in the winter of 2018–2019, it would have a significant positive impact on system reliability.

Table 11: Monthly LOLH and EUE for 2020–2021

LOLH (hours)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Scenario 1: LIL 2021, Holyrood TGS DAFOR = 15%	0.00	0.02	0.64	1.13	0.77	0.54	0.00	0.00
Scenario 2: LIL 2021, Holyrood TGS DAFOR = 18%	0.00	0.04	0.88	1.77	1.18	0.81	0.01	0.00
Scenario 3: LIL 2021, Holyrood TGS DAFOR = 20%	0.00	0.05	1.14	2.22	1.52	1.05	0.01	0.00
Scenario 4: LIL 2021, Holyrood TGS DAFOR = 20%, 50 MW imports	0.00	0.06	0.65	1.22	0.84	0.60	0.01	0.00
Scenario 5: LIL 2021, Holyrood TGS DAFOR = 20%, 100 MW imports	0.00	0.05	0.36	0.69	0.43	0.30	0.01	0.00
EUE (MWh)	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Scenario 1: LIL 2021, Holyrood TGS DAFOR = 15%	0	1	36	61	39	29	0	0
Scenario 2: LIL 2021, Holyrood TGS DAFOR = 18%	0	2	53	97	61	45	0	0
Scenario 3: LIL 2021, Holyrood TGS DAFOR = 20%	0	3	69	124	82	58	0	0
Scenario 4: LIL 2021, Holyrood TGS DAFOR = 20%, 50 MW imports	0	3	37	63	43	32	0	0
Scenario 5: LIL 2021, Holyrood TGS DAFOR = 20%, 100 MW imports	0	2	20	33	20	15	0	0

8.0 Risk and Risk Mitigation

7 Hydro's readiness planning for the 2020–2021 winter season is progressing well and positions the
 8 company to be ready in terms of generation and transmission availability by December 1, 2020.
 9 Potential risks and associated mitigation are described in the following sections, with updates provided
 10 in subsequent reports. Three of the four risks discussed below were previously identified in the 2019–
 11 2020 Winter Readiness Planning Reports.

8.1 Bay d'Espoir Operations

Hydro anticipates that Bay d'Espoir generation will be fully available by December 1, 2020. Three risks to reliable operations for the upcoming winter season have been identified.

8.1.1 Bay d'Espoir Penstocks

As a result of previous ruptures of the Bay d'Espoir penstocks, with the most recent being September 2019, Hydro implemented more frequent monitoring and inspections of Bay d'Espoir Penstocks 1, 2, and 3 to monitor penstock performance and ensure reliability in the short-term.

The inspection for Penstock 1 was completed in the summer of 2020 and did not identify any major defects or areas of concern. The inspection of Penstock 3, which was originally scheduled for completion in May 2020, was deferred to 2021 due to limitations associated with the onset of the COVID-19 pandemic. This decision was made in consultation with the consultant responsible for the penstock inspections and it was determined that Penstock 3 is safe for operation until the next scheduled inspection in 2021. Penstock 3 was last inspected in April 2019. The inspection for Penstock 2 is scheduled for October 19 to 22, 2020. Penstock 2 has not failed previously and the scheduled completion of the inspection in October 2020 allows for time in advance of winter to rehabilitate should any abnormalities be found.

Hydro has taken proactive measures to reduce downtime should another penstock leak occur. Hydro has added to its inventory long lead pre-rolled steel plate, consulted with third-party contractors to confirm priority availability of local welding resources, and developed a plan to mobilize an excavator to the penstock area in December 2020 to avoid potential transportation issues during winter months when the access roads can be snow covered and icy. Modifications to the Automatic Generator Control application in Hydro's Energy Management System, designed to limit the amount of rough zone operation, have also been implemented for Units 1 to 6 at Bay d'Espoir. A more prescriptive operating regime has been implemented for Units 1 and 2 given the history of Penstock 1. In this operating regime, once dispatched, Unit 1 and 2 are limited to a minimum unit loading of 50 MW and are not cycled or shut down as part of normal system operations.

1 Although Hydro has mitigated risk of failure to the extent possible, there is residual risk that a failure
2 could occur before further life extension work¹⁵ is executed. Hydro has estimated a 13 to 23 day repair
3 timeline, depending on circumstances, should a new failure occur.

4 **8.1.2 Bay d'Espoir Unit 1 Vibration**

5 As noted in Hydro's "2020–2021 Winter Readiness – Preliminary Overview,"¹⁶ higher than normal
6 vibration levels were being experienced during operation of Unit 1 at loads between 55 and 65 MW.
7 Hydro completed a four-day outage on September 11, 2020 to investigate the vibration issue and
8 determined that the generator guide bearing required adjustment to improve clearances. During the
9 outage these adjustments were completed, critical clearance measurements were taken, and bolt
10 torque was checked on embedded parts. Completion of these activities successfully reduced the
11 vibration levels of the unit into an acceptable range allowing for the removal of the previously imposed
12 operating restriction within the 55–65 MW load range. Hydro is monitoring the trending data of Unit 1
13 and will provide a status update in subsequent winter readiness reporting.

14 **8.1.3 Bay d'Espoir Terminal Station Circuit Breaker Failures**

15 As introduced in Hydro's December 10, 2019 "2019–2020 Winter Readiness Planning Report," and
16 further described in the "Bay d'Espoir Terminal Station General Electric Dead Tank Circuit breaker
17 Failure Report,"¹⁷ since October 2018, Hydro has experienced four failures of 230 kV General Electric
18 ("GE") dead tank circuit breakers at the Bay d'Espoir Terminal Station.

19 Hydro has developed plans to minimize outage duration in the event of another failure by ensuring the
20 availability of spare breakers, and spare breaker phases. In the event of a failure, the associated outage
21 duration to complete repairs is estimated to be two to three days. Hydro has also implemented new
22 generator operating instructions supplemented with additional breaker protection to reduce the risk of
23 failure. Hydro is currently reviewing its options for the long-term plan for replacement of these
24 breakers, with a view to balancing reliability and cost impacts to customers. Updates will be provided in
25 subsequent winter readiness reporting as available.

¹⁵ As communicated in its correspondence "2019 Failure of Bay d'Espoir Penstock 1 and Plan Regarding Penstock Life Extension," Newfoundland and Labrador Hydro, June 3, 2020, Hydro is developing a plan for life extension of the Bay d'Espoir penstocks. This work is informed by prior condition assessments and reviews completed by Hydro's external consultants.

¹⁶ "2020–2021 Winter Readiness – Preliminary Overview," Newfoundland and Labrador Hydro, September 21, 2020.

¹⁷ "Bay d'Espoir Terminal Station General Electric Dead Tank Circuit breaker Failure Report," Newfoundland and Labrador Hydro, February 14, 2020.

1 8.2 Muskrat Falls to Happy Valley Interconnection Project

2 As previously identified in its 2019–2020 Winter Readiness Planning reports, the Muskrat Falls to Happy
3 Valley Interconnection is dependent on the reliable in-service of the generating units at Muskrat Falls.
4 As previously communicated to the Board, due to the impacts of the COVID-19 pandemic, the schedule
5 for Muskrat Falls Unit 1 release for service¹⁸ has been impacted and has therefore delayed the
6 completion of the interconnection project.

7 On September 28, 2020, Hydro filed an update with the Board regarding the scheduled in-service timing
8 of the Muskrat Falls generating units, with the first and second unit scheduled for in-service October 31,
9 2020 and December 31, 2020, respectively. In order to place the Muskrat Falls to Happy Valley
10 Interconnection in service, a lengthy cutover outage is required. This new schedule for units is now
11 placing a cutover timing in Labrador's early winter season which is not conducive to a planned outage
12 for customers. Additionally, as the commissioning of the units is still ongoing, in order to firmly plan on
13 use of the interconnection this winter, Hydro would prefer to witness the units in reliable service. As the
14 current schedule does not allow for this to occur in advance of winter, Hydro will continue to supply
15 Labrador East using the 138 kV interconnection to Churchill Falls via transmission line L1301/1302.

16 In light of the recent decision to continue to supply Labrador East using the 138 kV interconnection to
17 Churchill Falls, Hydro is currently reviewing its winter readiness requirements to determine if any
18 additional capital or operating work is required to ensure the provision of reliable service to Labrador
19 East for the 2020–2021 winter. Additionally, Hydro has implemented a reliability plan, similar to that
20 which was in place during the 2019–2020 winter season, for Labrador East for the upcoming winter
21 season. As committed in the September 30, 2020 filing, Hydro will provide monthly updates on the
22 status of its winter reliability plan for Labrador East beginning in November 2020 and carrying through
23 to March 2021.

24 As committed in the September 30, 2020 filing,¹⁹ Hydro will provide monthly updates on the status of its
25 winter reliability plan for Labrador East beginning in November 2020 and carrying through to March
26 2021.

¹⁸ First power was achieved on September 22, 2020 and the schedule for in-service announced on September 28, 2020.

¹⁹ "Muskrat Falls to Happy Valley Interconnection Update and Labrador East Reliability Plan Winter 2020–2021," Newfoundland and Labrador Hydro, September 30, 2020.

9.0 Conclusion

- 1
- 2 Despite the challenges faced this year with respect to the COVID-19 pandemic, Hydro is confident in its
- 3 winter readiness position and its risk mitigation plans as it heads into the 2020–2021 winter season.
- 4 Hydro will continue to monitor progress and execution risks and will file its next Winter Readiness
- 5 Planning report by November 10, 2020.



Appendix A

Status of Capital Projects Related to Winter Readiness

2020–2021 Winter Readiness Planning Report
Appendix A: Status of Capital Projects Related to Winter Readiness
Page 1 of 1



**Status of Winter Readiness Scope in 2020 Capital Projects
on the Island and Labrador Interconnected Systems**

Asset Category	Project Title	Expected Completion of Winter Readiness Scope (October 1, 2020 Update)
Hydraulic Generation	Overhaul Unit 2, Cat Arm	Complete
Hydraulic Generation	Overhaul Unit 1, Bay d'Espoir	Complete
Thermal Generation	Overhaul Unit 2 Turbine Valve, Holyrood	31-Oct-2020
Thermal Generation	Overhaul Unit 2 Generator, Holyrood	31-Oct-2020
Thermal Generation	Overhaul Unit 3 Boiler Feed Pump West, Holyrood	05-Nov-2020
Thermal Generation	Condition Assessment and Miscellaneous Upgrades, Holyrood	12-Nov-2020

Notes

1. See Appendix H for more details on the status of the Holyrood projects.



Appendix B

Status of Winter Readiness Testing of Plant and Equipment – Thermal Generation



Holyrood Thermal Generating Station
Winter Readiness Testing

30-Sep-20

Plant: Holyrood Operations

		Status of Test		
		Unit 1	Unit 2	Unit 3
		Bop		
Following Annual Outages, Unit is Run Up, Synchronized and all Systems Verified Before Operating Status Determined, as per Energy Control Centre ('ECC'), Prior to Coming Winter Operating Season to Ensure Preparedness. A Unit Load Test is Performed at this Time	S/U			N/A
Black Start Test of the Black Start Systems is Performed Prior to the Winter Operating Season	N/A	N/A	N/A	N/A
Perform Megger Testing of 600 Volt Motors Prior to the Winter Operating Season	✓			N/A

Safety:

Boiler Service Pressure Test Performed as Required by Regulator	✓			N/A
Safety Valves Testing as Required (Post Start-Up)		7-Oct		N/A
Boiler Operational Off-Line High/Low Drum Level Trip Tests	✓			N/A
H2 Emergency Venting Valving	✓			N/A
Breaker and Disconnect Operation Verified by Ops. Dept. and Whitbourne Crew	✓			N/A

Service Air and Instrument Air Systems:

All Stationary Air Compressors Available	N/A	N/A	N/A	N/A
All Portable Air Compressors Available	N/A	N/A	N/A	N/A
Air Compressor Operational Checks Performed (e.g. Oil Levels, Cooling Water, etc.)	N/A	N/A	N/A	✓
Air Compressor STBY/Sequencing Capability	N/A	N/A	N/A	✓

Raw and Makeup Water System:

Quarry Brook Dam Integrity	N/A	N/A	N/A	N/A
Raw Water Sump Water Supply Control Valve Operational	N/A	N/A	N/A	✓
Raw Water Pumps Operational	N/A	N/A	N/A	✓
Adequate Supply of Chemicals (1172, 1179, Polymer, etc.)	N/A	N/A	N/A	✓
1172, 1179, Polymer Injection Pumping Sets, Pumps, Valves, Lines, Agitators, etc. Operational	N/A	N/A	N/A	✓
Portable Diesel Pump Check of Emergency Plant Water Supply from Quarry Brook Dam	N/A	N/A	N/A	✓

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable

		Status of Test			
		Unit 1	Unit 2	Unit 3	Bop
30-Sep-20	Adequate and Readily Available Supply of Hoses for the Portable Diesel Pump from Quarry Brook Dam to Plant	N/A	N/A	N/A	✓

Raw and Makeup Water System and Water Treatment Plant:

Instrumentation and Controls Operational	N/A	N/A	N/A	N/A	✓
Analytical Rack Sample Cooler Filters Cleaned/Replaced as Required	N/A	N/A	N/A	N/A	✓
Analytical Rack Sample Coolers Cooling Water in Service	N/A	N/A	N/A	N/A	✓
Two (2) Sample Cooling Water Pumps Availability	N/A	N/A	N/A	N/A	✓

Clarifier:

Clarifier Recirculator, VFD Motor, VFD Controller	N/A	N/A	N/A	N/A	✓
Clarifier Scraper	N/A	N/A	N/A	N/A	✓
Clarifier Badger Meter and Clearwell Instrumentation	N/A	N/A	N/A	N/A	✓

Sand Filters:

Sand Filters (#s 1, 2 and 3) Resin Integrity	N/A	N/A	N/A	N/A	✓
Sand Filters (#s 1, 2 and 3) Valve Operation (Normal and Backwashing, etc.)	N/A	N/A	N/A	N/A	✓
Two (2) Clearwell Pumps Available	N/A	N/A	N/A	N/A	✓

Demineralization System:

Cation and Anion Trains (A, B and C) Resin Integrity	N/A	N/A	N/A	N/A	✓
Adequate Supply of Chemicals (Caustic Soda, Sulphuric Acid, 1172, 1179, Polymer, etc.)	N/A	N/A	N/A	N/A	✓
Sulphuric Acid and Caustic Soda Transfer Pumps, Valves, Lines, etc.	N/A	N/A	N/A	N/A	✓
Sulphuric Acid and Caustic Soda Regeneration Sets, Pumps, Valves, Lines, etc.	N/A	N/A	N/A	N/A	✓
Caustic Injection Pumping Sets, Pumps, Valves, Lines, Agitators, etc.	N/A	N/A	N/A	N/A	✓
Brine Injection Pumping Sets, Pumps, Valves, Lines, Agitators, etc.	N/A	N/A	N/A	N/A	✓

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station
Winter Readiness Testing

30-Sep-20

Reserve Feedwater System ("RFW"):		Status of Test			
		Unit 1	Unit 2	Unit 3	BoP
RFW Transfer Pump	Oil Normal Operating Level	✓			N/A
RFW Transfer Pumps	Operational	✓			N/A

Circulating Water ("CW") and Screen Wash System:

Vacuum Seal Pits Operational	✓				N/A
All CW Travelling Screens Operational	✓				N/A
CW Pump Motorized Discharge Valves 'Manual' and 'Auto', 'Cracked' Position Operation Verified	✓				N/A
CW Pump Motors Oil Normal Operating Level	✓				N/A
CW Pumps Operational	✓				N/A
CW Pump Discharge Vacuum Breakers Operational	✓				N/A
CW Travelling Screens Wash Pumps Operational	✓				N/A
Condenser Flushed	✓				N/A
Condenser Backwashed	✓				N/A
General Service ("GS") Coolers Backwashed, Cleaned, etc.	✓				N/A
Turbine/Generator ("TG") Coolers Backwashed, Cleaned, etc.	✓				N/A
Vacuum Pump Coolers Backwashed, Cleaned, etc.	✓				N/A

Boiler:

Pre-Outage Valve Survey Conducted of Boiler Drains	✓			N/A
Service Pressure Test on Boiler for Tube Leaks		✓		N/A

Condenser Air Extraction System:

Vacuum Pumps Available and Tested for STBY 'Auto-Start'	✓			N/A
Vacuum Pump Seal Water Tank Water Level Controller Operational	✓			N/A
Vacuum Pump Seal Water Pump Operational	✓			N/A
Condenser Vacuum Breakers Operational	✓			N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable

30-Sep-20

High Pressure ("HP") Feedwater System:
Boiler Feed Pumps:

	Status of Test			
	Unit 1	Unit 2	Unit 3	BoP
Boiler Feed Pumps Available	✓			N/A
Boiler Feed Pump Oil Tank Normal Operating Level and Checked for Moisture Content	✓			N/A
Boiler Feed Pump Auxiliary Oil Pumps Available	✓			N/A
Boiler Feed Pump Suction Valves and Limit Switches	✓			N/A
Boiler Feed Pump Emergency Gland Seal Injection Pump Available	✓			N/A
Boiler Feed Pump Emergency Gland Seal Pump Oil Normal Operating Level	✓			N/A
Boiler Feed Pump Gland Seal Water Available from the Emergency Pump and Condensate Extraction Pumps	✓			N/A
Boiler Feed Pump Gland Seal Water Control Valve Operational	✓			N/A
Boiler Feed Pump Gland Seal Water Drains Tank Level Float Operated Valve Operational (Units 1 and 2)	✓			N/A
Boiler Feed Pump Gland Seal Water Transfer Pumps Operational (Units 1 and 2)	✓			N/A
Boiler Feed Pump Gland Seal Water Drains Tank Level Control Valve Operational (Unit 3)	N/A		N/A	N/A
Boiler Feed Pump Gland Seal Water Transfer Pumps Operational (Unit 3)	N/A		N/A	N/A
Boiler Feed Pump Recirculation Control Valves Operational	✓			N/A
Boiler Feed Pump Motorized Discharge Pilot and Main Valves Operational	✓			N/A
Low Load Feedwater Isolator and Control Valves Operational	✓			N/A
Main Feedwater Isolator and Control Valves Operational	✓			N/A
High Pressure Heater Motorized Valves (Inlet, Outlet and Bypass) Checked for Proper Operation, Sequencing, etc.	✓			N/A

Miscellaneous:

Economizer 'Manual' Operated Valve Operational	✓			N/A
Economizer Motorized Recirculation Valve Operational (Unit 3)	N/A		N/A	N/A
Boiler Drum Level Instrumentation Operational Work on West Xmitter	✓			N/A
HP Heater Bleed Steam Check Valves Operational	✓			N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station

a major energy company

Winter Readiness Testing					
		Unit 1	Unit 2	Unit 3	BOP
Start-Up Desuperheater Steam and Water Valving Operation/Position Verified	30-Sep-20	✓			N/A
Main Steam and Reheat Steam Desuperheater Spray Water Isolators and Control Valves Operational		✓			N/A
Auxiliary Steam Desuperheater Spray Water Control Valve Operational (U3)		N/A	N/A		N/A

Low Pressure ("LP") Feedwater System:

Condenser:

Condenser Hotwell Make-Up/Surplus Control Valves Operation Verified	✓				N/A
Condenser Hotwell Make-Up Motorized Isolating Valve Operation Verified	✓				N/A
Condenser Dye Test for Leaks, as Required	✓				N/A

Ammonia and Control System:

Adequate Supply in Place	N/A	N/A	N/A	N/A	✓
Pumps Operational	N/A	N/A	N/A	N/A	✓
Control Instrumentation Operational	N/A	N/A	N/A	N/A	✓

Condensate Extraction Pumps:

Condensate Extraction Pumps Available	✓				N/A
Condensate Extraction Pump Motors Bearing Oil Normal Operating Level	✓				N/A
Condensate Extraction Pump Motor Cooling Water Available (Unit 3)	N/A	N/A	N/A		N/A

Condensate Polishers:

Resin Integrity Verified	✓				N/A
Two (2) Polishers Rinsed and Available	✓				N/A
Valve Operation (Normal and Regenerating, etc.)	✓				N/A
Regeneration System Skids Available (Valving, Pumps, Blowers, Tanks, etc.)	✓				N/A
Condensate Polisher Bypass Control Valve Operational	✓				N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station
Winter Readiness Testing

30-Sep-20

Low Pressure Heaters:

Low Load Recirculation Control Valve Operation

	Status of Test		
	Unit 1	Unit 2	Unit 3
	Bop		
Low Pressure Heaters:			

Low Load Recirculation Control Valve Operation	✓		N/A
--	---	--	-----

Dearator:

Dearator Normal Operating Level	✓		N/A
Dearator Steam Coil Operational	✓		N/A
Dearator Pegging Steam Operational	✓		N/A
Dearator Low Level Trip Test	S/U		N/A

Miscellaneous:

Condenser Flash Tank Control Valve Operation/Position	✓		N/A
Turbine Low Pressure Exhaust Hood Spray Motorized Valve Operation	✓		N/A
Start-Up Desuperheater Steam and Water Valving Operational (Units 1 and 2)	✓		N/A
LP Heater Bleed Steam Check Valves Operational	✓		N/A

Bled Steam and Heater Drains System:

LP and HP Instrumentation and Control Operational	✓		N/A
LP and HP Heater Level Control Operational	✓		N/A
LP Heater Condensate Drains Pumps Operational	✓		N/A
#4 High Pressure ("HP") Heater Condensate Drains Pump Operational	✓		N/A

Air and Flue Gas System:

Instrumentation and Control Operational	✓		N/A
---	---	--	-----

Forced Draft ("FD") Fans and Air Dampers:

Two (2) FD Fans Available	✓		N/A
Bearing Oil Normal Operating Level	✓		N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station
Winter Readiness Testing

	30-Sep-20	Status of Test		
		Unit 1	Unit 2	Unit 3
Cooling Water on to Fans		✓		N/A
Stroke Variable Inlet Vanes ("VIV's")		✓		N/A
Stroke Discharge Dampers		✓		N/A
FD Fan Motor Variable Speed Drives Operational		✓		N/A
All Burner Auxiliary Air Dampers/Positioners Operation (Units 1 and 2)		✓		N/A
All Elevation Air Flow Dampers/Positioners Operation (Unit 3) Middle Center		N/A	N/A	N/A

Rotary Air Heaters:

Rotary Air Heaters Operational	✓	✓		N/A
Rotary Air Heaters Bearing Oil (Top and Bottom) Normal Operating Level	✓	✓		N/A
Rotary Air Heaters Bearing Cooling Water On	✓	✓		N/A
Rotary Air Heaters Electric Motor Drives Operational	✓	✓		N/A
Rotary Air Heaters Air Supply to Air Heater Air Motor Drives Open	✓	✓		N/A
Rotary Air Heaters Start-Up of Air Motor Drive Upon Loss of AC Power Supply to the Normal Operating Electric Drive Motor	✓	✓		N/A
Rotary Air Heaters Steam Supply Control Valves Operational (* Note: Two Steam Supplies on (Units 1 and 2))	✓	✓		N/A
Rotary Air Heaters Sootblowers Operational	✓	✓		N/A

Boiler Sootblowing System:

Sootblower Control Panel Operational	✓			N/A
Sootblowers Steam Supply Control Valve Operational	✓			N/A
Sootblowers Overhauled During Annual Outage Verify Operation (e.g. Rotation, Travel Advancing/Retracting from Furnace, Leaks, etc.) First Time Unit is Placed on Line	✓			N/A

Light Fuel Oil System:

Hydro Pad Operational (Accumulator)	✓			N/A
Light Oil Pumps Available	✓			N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable

	30-Sep-20	Unit 1	Unit 2	Unit 3	BOP
Pumps, Valves (including Control and Trip), Lines, Strainers, Pressure (Locally and UCB)	✓				N/A
Check Light Oil Supply and Return Lines to/from Plant Respectively	N/A	N/A	N/A		✓
Suction Strainers Cleaned with Covers Secured	✓				N/A
Ignitors Cleaned, Securely in Place with Associated Lines Securely Fastened	✓				N/A
Ignitors all Checked for Operation During Unit Start-Up (e.g. Ignitor Control Box, Valve Operation, Lighting, etc.)	✓				N/A

Fuel Oil Delivery System, Auxiliary Steam and Fuel Oil Piping System:

Adequate Heavy Oil Storage	N/A	N/A	N/A	N/A	✓
Heavy Oil Piping from Dock to Tankfarm, Tankfarm to Plant Day Tank and Day Tank to Heavy Oil Sets	N/A	N/A	N/A	N/A	✓
Adequate Light Oil Storage	✓	N/A	N/A	N/A	✓
Light Oil Piping from Road Tanker Transfer Pump to Tanks and from Tanks to Light Oil Sets in Plant	N/A	N/A	N/A	N/A	✓
All Storage Tanks Suction Heaters Available when Required	N/A	N/A	N/A	N/A	✓
All Storage Tanks Platform Heaters Available when Required	N/A	N/A	N/A	N/A	N/A
Auxiliary Steam for Suction Heaters Available	N/A	N/A	N/A	N/A	S/U
Auxiliary Steam for Platform Heaters Available	N/A	N/A	N/A	N/A	N/A
Auxiliary Steam for Heat Tracing Available	N/A	N/A	N/A	N/A	S/U
Electrical Heat Tracing for Fuel Oil Lines Available	N/A	N/A	N/A	N/A	✓
Day Tank Supply Line Trip Valve Tested	N/A	N/A	N/A	N/A	✓
Day Tank Available to Receive Oil	N/A	N/A	N/A	N/A	✓
Day Tank Steam Coil Available	N/A	N/A	N/A	N/A	✓

Fuel (Heavy) Oil System:

Fuel Oil Heating Sets	✓			N/A
Fuel Oil Heaters Available	✓			N/A
Fuel Oil Heaters Cleaned and Inspected	✓			N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable

	30-Sep-20	Unit 1	Unit 2	Unit 3	Bop
Steam Supply to Heavy Oil Set Heaters Available as Required		✓			N/A
Fuel Oil Heaters Temperature Steam Control Valve Operational		✓			N/A
Suction Strainers Cleaned (including standby and extras) with Covers Secured		✓			N/A
Fuel Oil Accumulator Operational		✓			N/A
Fuel Oil Pumps Available		✓			N/A
Pump's 'Auto-Start' Check Off-Line		✓			N/A
Header Pressure Control Valve Operational		✓			N/A
Fuel Oil Meter Operational		✓			N/A

Fuel Oil Supply Control, Trip, Long and Short Recirculation Valves:

Fuel Oil Supply Control Valve Operational	✓	✓			N/A
Fuel Oil Trip Valve Operational		✓			N/A
Fuel Oil Long Recirculation Valve Operational (Units 1 and 2)		✓			N/A
Fuel Oil Short Recirculation Valve Operational (Units 1 and 2)		✓			N/A
Elevation Fuel Oil Trip Valves Operational (Unit 3)		N/A	N/A		N/A
Elevation Fuel Oil Minimum Supply Control Valves Operational (Unit 3)		N/A	N/A		N/A
Elevation Fuel Oil Supply Control Valves Operational (Unit 3)		N/A	N/A		N/A
Main Fuel Oil Recirculation Valve Operational (Unit 3)		N/A	N/A		N/A
Elevation Recirculation Valves Operational (Unit 3)		N/A	N/A		N/A

Burners:

All Burners Cleaned, Securely in Place with Associated Lines Securely Fastened	✓				N/A
All Burners Checked for Operation During Unit Start-Up (e.g. Advancing/Retracting, Valve Operation, Lighting, etc.)		✓			N/A
All Burner Tilts Checked for Operation (Units 1 and 2)		✓			N/A

Fuel Additive System:

Adequate Supply Available	✓				N/A
---------------------------	---	--	--	--	-----

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station
Winter Readiness Testing

	30-Sep-20	Unit 1	Unit 2	Unit 3	BOP
Pumps Available		✓			N/A
Tanks, Agitators, etc. Available		✓			N/A

General Service ("GS") System:

GS Heat Exchangers Backwashed, Cleaned, etc.	✓				N/A
Stage I GS Plate Cooler Strainers Cleaned	✓				N/A
Stage I GS 'Auto-Clean' Strainer Operational	✓				N/A
Stage I GS Duplex Strainers Cleaned	✓				N/A
GS Pump Suction Strainers Cleaned	✓				N/A
GS Pump Oil Normal Operating Level	✓				N/A
GS Pumps Available and Tested for STBY 'Auto-Start'	✓				N/A

Turbine/Generator ("TG") Auxiliary Cooling System:

TG Head Tank Normal Operating Level	✓				N/A
Turbine Lube Oil Coolers Operational	✓				N/A
TG Heat Exchangers Backwashed, Cleaned, etc.	✓				N/A
TG Pump Oil Normal Operating Level	✓				N/A
TG Pumps Available and Tested for STBY 'Auto-Start'	✓				N/A

Turbine Generator ("TG") System:

Hydraulic System Units 1 and 2:

Hydraulic System Accumulators Operational	✓				N/A
Hydraulic System Storage Tank Normal Operating Level and Checked for Moisture Content	✓				N/A
Hydraulic System Storage Tank Air Purging of Moisture in Place	✓				N/A
Hydraulic Set Primary, Secondary Filter Indications Ok	✓				N/A
Two (2) Hydraulic Fluid Pumps Availability	✓				N/A
Hydraulic Pump Auto Start Testing	✓				N/A
Two (2) Hydraulic Fluid Pump Coolers Availability	✓				N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station
Winter Readiness Testing

30-Sep-20

Valves:

	Unit 1	Unit 2	Unit 3	Bop
Pre-Outage Valve Survey Conducted of Boiler Drains	✓	✓		N/A
Turbine Main Stop Valve Testing (Units 1 and 2)	N/A	N/A	N/A	N/A
Turbine Two (2) Main Stop Valves Testing (Unit 3)				N/A
Turbine 'Left-Hand' and 'Right-Hand' Reheat Stop and Intercept Control Valve Testing Verified	✓			N/A
Turbine Six (6) Main Control Valve Operation (Units 1 and 2)	✓		N/A	N/A
Turbine Four (4) Main Control Valve Operation (Unit 3)	N/A	N/A		N/A
Turbine Blowdown Valve Operation	✓			N/A

Lubricating System:

	Unit 1	Unit 2	Unit 3	Bop
Lube Oil Tank Normal Operating Level and Checked for Moisture Content	✓	N/A	N/A	N/A
Portable Centrifuge Operational		✓		N/A
Lube Oil Tank Vapor Extractor Operation		✓		N/A
Bowser Oil Conditioner Vapor Extractor Operation (Units 1 and 2)	✓			N/A
Two (2) AC Lube Oil Pumps Available and Tested for STBY 'Auto-Start' (Units 1 and 2)	✓			N/A
DC Pump Testing and Starting from UCB (Units 1 and 2)	✓			N/A
Verify Discharge Pressure of EACH AC Lube Oil Pumps (Locally and UCB) (Units 1 and 2)	✓			N/A
Verify Discharge Pressure of DC Lube Oil Pump (Locally and UCB) (Units 1 and 2)	✓			N/A
Jacking Oil Pump Testing and Starting from UCB (Unit 3)	N/A	N/A		N/A
Verify Discharge Pressure of Jacking Oil Pump (Locally and UCB)	N/A	N/A		N/A
Auxiliary Oil Pump ("AOP") Testing and Starting from UCB and Turbine Lube Oil Tank (Unit 3)	N/A	N/A		N/A
Verify Discharge Pressure of AOP Pump (Locally and UCB) (Unit 3)	N/A	N/A		N/A
AC Pump Testing and Starting from UCB and Turbine Lube Oil Tank (Unit 3)	N/A	N/A		N/A
Verify Discharge Pressure of AC Flushing Oil Pump (Locally and UCB) (Unit 3)	N/A	N/A		N/A
DC Pump Testing and Starting from UCB and Turbine Lube Oil Tank (Unit 3)	N/A	N/A		N/A
Verify Discharge Pressure of DC Flushing Oil Pump (Locally and UCB) (Unit 3)	N/A	N/A		N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable

	30-Sep-20	Status of Test			
		Unit 1	Unit 2	Unit 3	Bop
Barring/Turning Gear:					
Turning Gear Operation Verified		✓			N/A
Perform Trip Test of Turning Gear		✓			N/A
Miscellaneous:					
Steam Seal Regulator Operational		✓			N/A
Operational On-Line/Off-Line Overspeed Trip Tests		✓			N/A

Hydrogen ("H2") and Carbon Dioxide ("CO2") System:

H2 Generation and Storage System:

System in Operation	N/A	N/A	N/A	N/A	N/A
Electrolyzer/H2 Generator Operational	N/A	N/A	N/A	N/A	N/A
Chiller Operational	N/A	N/A	N/A	N/A	N/A
DI Water Purifier Operational	N/A	N/A	N/A	N/A	N/A

H2 and CO2 Bulk Packs:

Adequate H2 Bulk Packs on Hand for Contingency Purposes	N/A	N/A	N/A	✓
CO2 Adequate Bulk Packs on Hand	N/A	N/A	N/A	✓

Generator:

Generator Exciter Operation Checked Off- and On-Line	✓				N/A
Seal Oil System Tested with 'Air' on Generator in Preparation for Leak Testing	✓				N/A
Seal Oil Regulator Operational	✓				N/A
AC Seal Oil Pumps Available and Tested for STBY 'Auto-Start' (Units 1 and 2)	✓				N/A
AC Seal Oil Pump Available (Unit 3)	N/A				N/A
DC Seal Oil Pump Available and Tested for STBY 'Auto-Start'	✓				N/A
Seal Oil Vacuum Pumps Available	S/U				N/A

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station
Winter Readiness Testing

	30-Sep-20	Unit 1	Unit 2	Unit 3	Status of Test
		Bop			
Vacuum Tank Level Control Operational		✓			N/A
H2 System in Operation and/or Adequate Bulk Packs on Hand for Contingency Purposes		N/A	N/A	N/A	✓
CO2 Adequate Bulk Packs on Hand		N/A	N/A	N/A	✓
Leak Testing Performed Prior to 'Gassing Up' Generator		✓			N/A
Purity, Dew Point, etc. Instrumentation Operation Verified		✓			N/A

Powerhouse and Switchyard Single Line:

Plant 129V System:

129V Battery Banks Checked Stage I and II	N/A	N/A	N/A	N/A	✓
129V Battery Chargers Checked Stage I and II	N/A	N/A	N/A	N/A	✓

Plant 258V System:

258V Battery Banks Checked Stage I and II	N/A	N/A	N/A	N/A	✓
258V Battery Chargers Checked Stage I and II	N/A	N/A	N/A	N/A	✓

Plant Uninterrupted Power Supplies ("UPS"):

Number's 1, 2, 3 and 4 'UPS' Power Supplies including Batteries, Cooling Fans, etc., Checked	N/A	N/A	N/A	N/A	✓
--	-----	-----	-----	-----	---

Emergency Diesel Generators:

Stage I and II Emergency Diesel Generators Tested for Emergency Stop	N/A	N/A	N/A	N/A	✓
Stage I and II Emergency Diesel Generators Tested for Manual and Auto-Start Operation Along with Auto Breaker Closure as well as Emergency Manual Closing of Breakers	N/A	N/A	N/A	N/A	✓
Diesel Bus Tie Breaker ("DBT") Operation Verified	N/A	N/A	N/A	N/A	✓

Fire Protection System:

All Fire Protection Zones in Service	N/A	N/A	N/A	N/A	✓
Fire Control/Alarm Panel Status	N/A	N/A	N/A	N/A	✓
Fire Alarm Beacons Operational	N/A	N/A	N/A	N/A	✓

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Holyrood Thermal Generating Station
Winter Readiness Testing

	30-Sep-20	Status of Test			
		Unit 1	Unit 2	Unit 3	Bop
Diesel Fire Pump Checked for 'Manual' and 'Auto' Start, etc.		N/A	N/A	N/A	✓
Diesel Fire Pump Controller, Charger and Battery Check		N/A	N/A	N/A	✓
Electric Fire Pump Checked for 'Manual' and 'Auto' Start, etc.		N/A	N/A	N/A	✓
Electric Fire Pump Controller Check		N/A	N/A	N/A	✓
Public Address System Status		N/A	N/A	N/A	✓

Holyrood Main Powerhouse:

Back-Up ECC and Guardhouse Propane Generator	N/A	N/A	N/A	N/A	✓
--	-----	-----	-----	-----	---

Plant Air Conditioning System:

Control and Relay Rooms	N/A	N/A	N/A	N/A	✓
Uninterrupted Power Supply ("UPS") #1 Room	N/A	N/A	N/A	N/A	✓
Generator Excitation and 'UPS' #s 2, 3 and 4 Room (Unit 3)	N/A	N/A	N/A	N/A	✓

Plant Heating Steam:

All Systems Operational for when Required	N/A	N/A	N/A	N/A	✓
---	-----	-----	-----	-----	---

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Appendix C

Status of Winter Readiness Testing of Plant and Equipment – Hydraulic Generation

		Status of Test								
		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Bop PH 1	Bop PH 2
Following Annual Outages, Unit is Run Up, Synchronized and all Systems Verified Before Operating Status Determined, as per Energy Control Centre ("ECC"), Prior to Coming Winter Operating Season to Ensure Preparedness. A Unit Load Test is Performed at this Time		✓	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A
Black Start Test of the Black Start Systems is Performed Prior to the Winter Operating Season. Station Service Transfers Alternate Sources.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓

Spherical Valves

Turbine Main Stop Valve Testing	✓	✓	23-Oct	6-Nov	✓	✓	✓	N/A	N/A
Turbine Main Stop Valve Operational	✓	✓	23-Oct	6-Nov	✓	✓	N/A	N/A	N/A

Service Air, Instrument Air Systems Compressors

All Stationary Air Compressors Available	N/A	✓	✓							
Air Compressor Operational Checks Performed (e.g. Oil Levels, Cooling Water, etc.)	N/A	✓	✓							
Air Compressor Standby/Sequencing Capability/Lead Lag/Standby	N/A	✓	✓							
HP Compressors Available	N/A	✓	✓							
LP Compressor Available	N/A	✓	✓							
Instrumentation Control and Alarms Operational	N/A	✓	✓							

TG Cooling Water Systems

Cooling Water Pumps Available	✓	✓	23-Oct	Nov.6	✓	✓	N/A	✓	N/A
Emergency Cooling Water Available Penstock Supply	✓	✓	23-Oct	Nov.6	✓	✓	N/A	✓	✓
Cooling Water System Available	✓	✓	23-Oct	Nov.6	✓	✓	2-Oct	✓	✓
TG Pumps Available and Tested for Auto/Manual Start	✓	✓	23-Oct	Nov.6	✓	✓	N/A	N/A	N/A
Shaft Seal System Available	✓	✓	23-Oct	Nov.6	✓	✓	2-Oct	N/A	N/A
CW Pump Motorized Discharge Valves 'Manual' and 'Auto', 'Cracked' Position	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Operation Verified. GCI/HIK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rotary Strainer Inspected and Available	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Turbine Generator Governor System

Hydraulic System Accumulators Operational	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A	N/A
Governor System Testing	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A	N/A
Governor System Available	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A	N/A
Hydraulic Pump(s) Available	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A	N/A
Hydraulic Pump Gov Auto Start Testing	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A	N/A

Generator

Generator Exciter Operation Checked Off- and On-Line	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A	N/A
Generator Exciter Available	✓	✓	23-Oct	6-Nov	✓	✓	2-Oct	N/A	N/A

✓ - Test completed
N/A - Not Applicable



newfoundland labrador
hydro
a nalcor energy company

Bay d'Espoir Hydraulic Generating Station

	Status of Test					
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	Unit 7	Bop PH 1	Bop PH 2			

Lubricating System

Portable Centrifuge Operational	✓	✓	✓	23-Oct	6-Nov	✓
Portable Oil Pump (Jacking)	✓	✓	✓	23-Oct	6-Nov	✓
Oil Level System Generator Metering Available	✓	✓	✓	23-Oct	6-Nov	✓
Oil Level System Turbine Metering Available	✓	✓	✓	23-Oct	6-Nov	✓
AC High Pressure Jacking Oil Pump Available Automatic	N/A	N/A	N/A	N/A	N/A	N/A

Switchyard/Terminal Station

Breakers and Disconnects Operational	✓	✓	✓	23-Oct	6-Nov	✓
Breaker and Disconnect Operation Verified by Ops. Dept. and TRO Bishops Falls	✓	✓	✓	23-Oct	6-Nov	✓

Intake

Water Elevation	✓	✓	✓	6-Nov	✓	✓
Trashrack System	✓	✓	✓	6-Nov	✓	✓
Gate Operation	✓	✓	✓	6-Nov	✓	✓

Surge Tank

Heating System	N/A	N/A	N/A	N/A	N/A	N/A
Alarm Systems	N/A	N/A	N/A	N/A	N/A	N/A

Spillway

Water Elevation	✓	✓	✓	✓	✓	✓
Gate Heating/Ice Away Unit	N/A	N/A	N/A	N/A	N/A	N/A
Gate Operation	N/A	N/A	N/A	N/A	N/A	N/A
Emergency (Back-Up) Diesel Generator	N/A	N/A	N/A	N/A	N/A	N/A
Emergency Lift Operation and Tested	N/A	N/A	N/A	N/A	N/A	N/A

Battery Banks And Battery Chargers

Plant 129V System	N/A	N/A	N/A	N/A	N/A	N/A
129V Battery Banks Checked	N/A	N/A	N/A	N/A	N/A	N/A
129V Battery Chargers	N/A	N/A	N/A	N/A	N/A	N/A
129V Battery Banks Available	N/A	N/A	N/A	N/A	N/A	N/A

Plant 48V System

48V Battery Banks Checked	N/A	N/A	N/A	N/A	N/A	N/A
---------------------------	-----	-----	-----	-----	-----	-----

Plant Uninterrupted Power Supplies ("UPS")

UPS Power Supplies (Inverter NWS)	N/A	N/A	N/A	N/A	N/A	N/A
-----------------------------------	-----	-----	-----	-----	-----	-----

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable

	Status of Test								
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Bop PH 1	Bop PH 2
Emergency Diesel Generators									
Emergency Diesel Generators Tested for Emergency Stop	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
Emergency Diesel Generators Tested for Manual and Auto-Start Operation along with Auto Breaker Closure as well as Emergency Manual Closing of Breakers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alternate AC Sources Available	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
Station Services Available	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
Transfer Alternate Source	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
Plant Air Conditioning System									
Control Rooms	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Communications Rooms	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Plant Heating Steam									
All Systems Operational for when Required	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓
All Systems Operational for when Required	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Hydraulic Generating Stations (Remote Units)

Status of Test											
Cat Arm			Hinds Lake		Upper Salmon		Granite Canal		Paradise River		
Unit 1	Unit 2	BoP PH	Unit 1	BoP	Unit 1	BoP	Unit 1	BoP	Unit 1	BoP	

FOLLOWING ANNUAL OUTAGES, UNIT IS RUN UP, SYNCHRONIZED AND ALL SYSTEMS VERIFIED BEFORE OPERATING STATUS DETERMINED, AS PER ENERGY CONTROL CENTRE ("ECC"), PRIOR TO COMING WINTER OPERATING SEASON TO ENSURE PREPAREDNESS. A UNIT LOAD TEST IS PERFORMED AT THIS TIME	✓	✓	N/A	23-Oct	23-Oct	✓	N/A	✓	N/A	20-Nov	N/A
BLACK START TEST OF THE BLACK START SYSTEMS IS PERFORMED PRIOR TO THE WINTER OPERATING SEASON. STATION SERVICE TRANSFERS ALTERNATE SOURCES	✓	✓	✓	23-Oct	23-Oct	✓	✓	✓	✓	20-Nov	20-Nov

Spherical Valves											
Turbine Main Stop Valve Testing	✓	✓	✓	N/A							
Turbine Main Stop Valve Operational	✓	✓	✓	N/A							

Service Air, Instrument Air Systems Compressors											
All Stationary Air Compressors Available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Air Compressor Operational Checks Performed (e.g. Oil Levels, Cooling Water, etc.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Air Compressor STBY/Sequencing Capability/Lead Lag/Standby	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HP Compressors Available	✓	✓	✓	✓	✓	✓	✓	N/A	N/A	N/A	N/A
LP Compressor Available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Instrumentation Control and Alarms Operational	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

TG Cooling Water Systems											
Cooling Water Pumps Available	✓	✓	✓	23-Oct	23-Oct	N/A	N/A	N/A	N/A	N/A	N/A
Emergency Cooling Water Available Penstock Supply	✓	✓	✓	✓	✓	N/A	N/A	✓	✓	✓	✓
Cooling Water System Available	✓	✓	✓	23-Oct	23-Oct	✓	✓	✓	✓	20-Nov	20-Nov
TG Pumps Available and Tested for Auto/Manual Start	✓	✓	✓	23-Oct	23-Oct	N/A	N/A	N/A	N/A	N/A	N/A
Shaft Seal System Available	N/A	N/A	N/A	23-Oct	23-Oct	✓	N/A	✓	✓	20-Nov	20-Nov
CW Pump Motorized Discharge Valves 'Manual' and 'Auto', 'Cracked' Position Operation Verified	✓	✓	✓	23-Oct	23-Oct	✓	✓	✓	✓	20-Nov	20-Nov
Rotary (Water) Strainer	✓	✓	✓	23-Oct	23-Oct	✓	✓	✓	✓	20-Nov	20-Nov

Turbine Generator Governor System											
Hydraulic System Accumulators Operational	✓	✓	N/A	23-Oct	N/A	✓	✓	✓	N/A	20-Nov	N/A
Governor System Testing	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A
Governor System Available	✓	✓	N/A	23-Oct	N/A	✓	N/A		N/A	20-Nov	N/A
Hydraulic Pump(s) Available	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A
Hydraulic Pump Gov Auto Start Testing	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A

Generator											
Generator Exciter Operation Checked Off- and On-Line	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A

Lubricating System											
Portable Centrifuge Operational	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A
Portable Oil Pump (Jacking)	✓	✓	✓	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A
Oil Level System Generator Metering	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A
Oil Level System Turbine Metering	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	N/A	N/A
AC High Pressure Jacking Oil Pump Available Automatic	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	N/A	N/A

Miscellaneous											
Breaker and Disconnect Operation Verified by Ops. Dept. and TRO Crew	✓	✓	✓	23-Oct	N/A	✓	N/A	✓	N/A	20-Nov	N/A

Control Structure											
Water Elevation	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A
Gate Operation	N/A	N/A	N/A	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A

Intake											
Water Elevation	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	✓	N/A
Trashrack System	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	✓	N/A
Gate Operation	✓	✓	N/A	23-Oct	N/A	✓	N/A	✓	N/A	✓	N/A

Spillway/Bypass											
Water Elevation	N/A	N/A	N/A	N/A	23-Oct	N/A	✓	N/A	✓	20-Nov	N/A
Gate Heating/Ice Away Unit	N/A	N/A	N/A	N/A	23-Oct	N/A	✓	✓	✓	N/A	N/A
Gate Operation	N/A	N/A	N/A	N/A	23-Oct	N/A	✓	N/A	✓	N/A	N/A
Emergency (Back-Up) Diesel Generator	N/A	N/A	N/A	N/A	23-Oct	N/A	✓	N/A	N/A	N/A	N/A
Emergency Lift Operation and Tested	N/A	N/A	N/A	N/A	23-Oct	N/A	✓	N/A	N/A	N/A	N/A

Battery Banks And Battery Chargers											
Plant 129V System											
129V Battery Banks Checked	✓	✓	✓	✓	✓	✓	✓	✓	18-Nov	18-Nov	✓
129V Battery Chargers	✓	✓	✓	✓	✓	✓	✓	✓	18-Nov	18-Nov	✓
129V Battery Banks Available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Hydraulic Generating Stations (Remote Units)

Status of Test												
Cat Arm			Hinds Lake			Upper Salmon			Granite Canal		Paradise River	
Unit 1	Unit 2	BoP PH	Unit 1	BoP	Unit 1	BoP	Unit 1	BoP	Unit 1	BoP	Unit 1	BoP

Plant 48V System

48V Battery Banks Checked	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
---------------------------	---	---	---	---	---	---	---	---	---	---	---

Emergency Diesel Generators

Emergency Diesel Generators Tested for Emergency Stop	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emergency Diesel Generators Tested for Manual and Auto-Start Operation along with Auto Breaker Closure as well as Emergency Manual Closing of Breakers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alternate AC Sources Available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Station Services Available	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transfer Alternate Source	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Plant Air Conditioning System

Control Rooms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Communications Rooms	N/A	N/A	✓	N/A	✓	N/A	✓	✓	✓	✓	✓

Plant Heating Steam

All Systems Operational for when Required	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
---	---	---	---	---	---	---	---	---	---	---	---

S/U - Final confirmation completed during Start Up. When possible, test also completed during annual outage.

✓ - Test completed

N/A - Not Applicable



Appendix D

Master Generation Outage Schedule

2020–2021 Winter Readiness Planning Report
Appendix D: Master Generation Outage Schedule
Page 1 of 1

2020 Generation Outage Schedule*															
Unit	Week Starting	November					December					Scheduled Annual Maintenance Outages			
		MW	4	11	18	25	1	8	15	22	29	6	13	20	27
Holyrood - G1	170														July 6 - October 16
Holyrood - G2	170														October 16 - October 30
Holyrood - G3	150														
Bay d'Espoir - G1	76.5														
Bay d'Espoir - G2	76.5														
Bay d'Espoir - G3	76.5														
Bay d'Espoir - G4	76.5														
Bay d'Espoir - G5	76.5														
Bay d'Espoir - G6	76.5														
Bay d'Espoir - G7	154.4														
Upper Salmon	84														
Granite Canal	40														
Hinds Lake	75														
Cat Arm 1	67														
Cat Arm 2	67														
Paradise River	8														
Hardwoods GT	50														
Stephenville GT	50														
Holyrood GT	123.5														
Star Lake	18														
Exploits	63														
CBPP CoGen	8														
NLH Diesels ¹	24.7														
Newfoundland Power	119.3														
CBPP 60 Hz	99.1														
Available Island Capacity	2,000	1,628.5	1,678.5	1,622.0	1,716.0	1,916.0	1,984.5	1,992.0	2,000.0	2,000.0	2,000.0	2,000.0	2,000.0	2,000.0	
Forecasted Gross Island Peak Load	1,047.0	1,086.0	1,133.0	1,210.0	1,273.0	1,336.0	1,399.0	1,462.0	1,720.0	1,720.0	1,720.0	1,720.0	1,720.0	1,720.0	
Total Island Reserves ²	581.5	592.5	489.0	506.0	760.0	765.5	710.0	655.0	397.0	397.0	397.0	397.0	397.0	397.0	
Largest Operating Unit	154.4	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	170.0	
Island N-1 Reserves	427.1	422.5	319.0	336.0	590.0	595.5	540.0	485.0	227.0	227.0	227.0	227.0	227.0	227.0	
Happy Valley Gas Turbine	25														

Legend:	White
Unit Available	Dark Blue
Unit Unavailable	Light Blue
Unit Derated	Grey
Unplanned/Extension	

Notes:
¹ 24.7 MW includes Hawkes Bay (5 MW), HRD Diesels (10 MW), and St. Anthony (9.7 MW).
² November and December Total Island Reserves include CBPP Capacity Assistance (net 97 MW) and System Voltage Reduction (20 MW).

*Preventative/Maintenance items that require short duration outages are not reflected in this chart. They are planned in conjunction with system operation for an appropriate time.



Appendix E

Critical Spares Status Listing – Thermal Generation



a naltor energy company

In Stock

Non-Stock

Explanation

Stock quantity of '1' or more in warehouse inventory.

Item is not stocked, '0' quantity in Warehouse, ordered as required.

See Notes column.

Quantity of '0' stock in warehouse, quantity of 1 or more on order.

Critical Spares - Thermal Generation

On Order

2020–2021 Winter Readiness Planning Report

Appendix E: Critical Spares Status Listing – Thermal Generation

Page 1 of 22

System	Sub-System	Asset	Critical Spare			Inventory Status
			Defined Spare	Notes	Inventory Description	
Fire Protection System	Electrical Driven Pump	Pump	Inboard Bearing		BEARING,PEERLESS INBOARD	In Stock
Fire Protection System	Electrical Driven Pump	Pump	Outboard Bearing		BEARING,PEERLESS OUTBOARD	In Stock
Fire Protection System	Electrical Driven Pump	Pump	Casing Ring		RING,PEERLESS CASING	In Stock
Fire Protection System	Electrical Driven Pump	Pump	Casing Gasket		GASKET,PEERLESS CASING	In Stock
Fuel Oil Delivery System Aux. Steam & Fuel Oil Piping	Valves	Day Tank Trip/Valve	8" Butterfly Valve and Actuator		VALVE,BUTTERFLY 8" 150#	In Stock
Fuel Oil Delivery System Aux. Steam & Fuel Oil Piping		Day Tank Trip Valve	Actuator		ACTUATOR,BETTS CB520	In Stock
Fuel Oil Delivery System Aux. Steam & Fuel Oil Piping		Fuel Line Block Valve	16" Gate Valve		VALVE,GATE 16" NEWCO	In Stock
Fuel Oil Delivery System Aux. Steam & Fuel Oil Piping		Day Tank Fill Line Control valve	6" Control Valve		VALVE,CONTROL 6" FISHER	In Stock
Fuel Oil Delivery System Aux. Steam & Fuel Oil Piping		Day Tank Fill Line Control valve	Actuator		ACTUATOR,PNEU 1-BSW-5-LT	In Stock
Hydrogen Generation and Storage	Valves	Motorized Valves	1/2" Valve		SOLENOID,VALVE ASCO 8316	In Stock
Hydrogen Generation and Storage	Tubing		Tubing		TUBING,SS 1" OD X 083 316	In Stock
Powerhouse and Switchyard Single Line	120V DC System	Charger	Control Unit		CONTROL UNIT,BATTERY CHG 129V	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Cation Valve - KV2205C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Cation Valve - KV2206C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Anion Valve - KV3205C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Anion Valve - KV3206C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Cation Valve - KV2203C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Cation Valve - KV2207C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Cation Valve - KV2202C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Cation Valve - KV2208C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Anion Valve - KV3203C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Anion Valve - KV3207C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Anion Valve - KV3202C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Anion Valve - KV3208C		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4003B		VALVE,ITT	In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4004A		VALVE,ITT	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 2 of 22

Asset		Critical Spare			Inventory Status
System	Sub-System	Asset	Defined Spare	Notes	
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4005B		VALVE,ITT In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4006B		VALVE,ITT In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4007B		VALVE,ITT In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4008B		VALVE,ITT In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4009B		VALVE,ITT In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4010A		VALVE,ITT In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - KV4011A		VALVE,ITT In Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Mixed Bed Valve - PCVA071	Non-Stock since there are non critical uses for this TX which can be "borrowed"	VALVE,PRESS REGULATING ANALYZER,ORION 2111ULEN Non-Stock
Raw and Makeup Water System & Water Treatment Plant	Demineralization System	Instrumentation/Controls	Sodium Monitor	Non-Stock is OK since there are non critical uses for this TX which can be "borrowed"	
Raw and Makeup Water System & Water Treatment Plant	Clarifier	Agitator	Frequency Drive		CONTROLLER,SPEED CLARIFIER RECIRCULATOR,STERLING 9A6108 In Stock
Raw and Makeup Water System & Water Treatment Plant	Clarifier	Agitator	Recirculator - Double Induction Speed Reducer - In Stock		
Raw and Makeup Water System & Water Treatment Plant	Cleanwell	Clearwell Pump	Pump, single stage, 750GPM	Critical repair parts stocked for this pump. No need to stock the entire pump.	PUMP ASSY,KSB 6" VALVE,BTFY 18" 150# CAPSTAN GEARBOX,SADI N/A Non-Stock
Fuel Oil Delivery System Aux. Steam & Fuel Oil Piping	Dock Quirk Closing Valves	18 "Butterfly Valve			In Stock
Fuel Oil Delivery System Aux. Steam & Fuel Oil Piping	Dock Capstan	Gear Box	Fire Pump Controller	Spare Controller on site in Warehouse	In Stock
Fire Protection System	Electrical Driven Pump	Control Panel	30A DC Breaker		BREAKER,DC/HFD2030 30A In Stock
Powerhouse and Switchyard Single Line	129V DC System	129 VDC Panel - Unit 1, 2, 3,	25A DC Breaker		BREAKER,DC/HFD2025 25A In Stock
Powerhouse and Switchyard Single Line	129V DC System	Common	129 VDC Panel - Unit 1, 2, 3,		BREAKER,DC/HFD2015 15A In Stock
Powerhouse and Switchyard Single Line	129V DC System	Common	15A DC Breaker		BREAKER,DC/KD3400 400A In Stock
Powerhouse and Switchyard Single Line	129V DC System	Common	400A DC Breaker		BREAKER,DC/HFD2050 50A In Stock
Powerhouse and Switchyard Single Line	129V DC System	Common	50A DC Breaker		
Powerhouse and Switchyard Single Line	129V DC System	Charger	Control Unit	CONTROL UNIT,BATTERY CHG 129V VALVE,BUTTERFLY 36" ACTUATOR ASSY/ROTOR WINDING COILS MODULE,NETWORK INTERFACE RELAY,AB TYPE P MODULE,PROCESSOR FOXBORO POWER SUPPLY,WEDMULLER TRANSMITTER, DP 1 KPA TO 1 KPA FLOWMETER,ROSE	In Stock
Circulating Water and Screen Wash System	CW Discharge Valves	Butterfly Valve	36" Butterfly Valve		In Stock
Circulating Water and Screen Wash System	CW Discharge Valves	Butterfly Valve	Actuator		In Stock
Circulating Water and Screen Wash System	CW Pumps	Motor	Coil		In Stock
Combustion Air & Gas Instruments	Burner Management	Burner Automation	Network Interface Modules	MODULE,NETWORK INTERFACE	In Stock
Combustion Air & Gas Instruments	Burner Management	Burner Automation	Master Fuel Trip Relays	RELAY,AB TYPE P	In Stock
Combustion Air & Gas Instruments	Burner Management	Burner Automation	DCS Control Processor	MODULE,PROCESSOR FOXBORO	In Stock
Combustion Air & Gas Instruments	Flame Scanners	24Vdc Scanner Power Supply	Power Supply,WEDMULLER	POWER SUPPLY,WEDMULLER	In Stock
Combustion Air & Gas Instruments	Air Flow Transmitters	Transmitter	Transmitter	TRANSMITTER, DP 1 KPA TO 1 KPA	In Stock
Combustion Air & Gas Instruments	Burner Management	Oil Flow Transmitter	One spare F.O. Flow TX for both units	FLOWMETER,ROSE	In Stock
Condenser Air Extraction System	Vacuum Breakers		6' Flanged	VALVE,AIR & VACUUM 6 FLG	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 3 of 22

Asset	Sub-System	Asset	Defined Spare	Notes	Critical Spare		Inventory Status
					Inventory Description	On Order	
Generator	Seal Oil System	Seals			HYDROGEN SEAL RINGS, GE		In Stock
Generator	Exciter	Controls	Archer Coupler		CARD, ABB UNS0672		In Stock
Generator	Exciter	Controls	Conduction Monitor		CARD, ABB UNS0673		In Stock
Generator	Exciter	Controls	Crowbar		CARD, ABB UNS0017AVAR1		In Stock
Generator	Exciter	Controls	Digital ArcNet		CARD, ABB URC090		In Stock
Generator	Exciter	Controls	Binary Input		CARD, ABB UFC092		In Stock
Generator	Exciter	Controls	Output Relay		CARD, ABB ARC093		In Stock
Generator	Exciter	Controls	Measuring Card		CARD, ABB UNC4672		In Stock
Generator	Exciter	Controls	Measuring Card		CARD, ABB UNC4673		In Stock
Generator	Exciter	Controls	I/O Connection		CARD, ABB UNC4674		In Stock
Generator	Exciter	Controls	Converter		CARD, ABB UNS2670		In Stock
Generator	Exciter	Controls	Snubber Bridge		SNUBBER, ABB UNS4681V12		In Stock
Generator	Exciter	Controls	Control		CARD, ABB HME30900R0001		In Stock
Generator	Exciter	Controls	Power Supply		CARD, ABB KUC321		In Stock
Generator	Exciter	Controls	Pulse Gen		CARD, ABB GDB021		In Stock
Generator	Exciter	Controls	Combined I/O		CARD, ABB UAC326		In Stock
Generator	Exciter	Controls	Control Panel		CARD, ABB AFC094		In Stock
Generator	Exciter	Controls	Breaker		BREAKER, FIELD ABB F3/SE		In Stock
Generator	Stator	PT Cubicle	Transformer	On Site	N/A		In Stock
Generator	Seal Oil System	Regulator	Primary Contact for Generator P.T.		CONTACT ASSY, PT		In Stock
Generator	Light Oil	Regulator	1.5" Regulating Valve		SEAL OIL REG KIT, RK		In Stock
Generator	Light Oil	Regulator	1" Valve		VALVE/FISH F.O. TRIP		In Stock
Generator	Light Oil	Igniter Control Box	Igniter Transformer		XFMRF/FOSSIL 5870-542F		In Stock
Generator	Light Oil	Igniter Control Box	Sunspot		BASE, AMPLIFIER & TERMINAL		In Stock
Generator	Light Oil	Igniter Control Box	Valve Assembly / Oil Igniter		IGNITER, ASSEMBLY ALSTOM		In Stock
Generator	L.P. Heater Controls (Water Induction Protection)		Level Transmitter		TRANSMITTER, LEVEL		In Stock
L.P. Feedwater System	L.P. Heater Controls (Water Induction Protection)		Aquarian Alarm Modules		MODULE, AQUARIAN		In Stock
L.P. Feedwater System	L.P. Heater Controls (Water Induction Protection)		Relays		RELAY, PLUG-IN 12 PIN AC		In Stock
L.P. Feedwater System	L.P. Heater Controls (Water Induction Protection)		Solenoid		SOLENOID, ASCO 8300 125 VDC		In Stock
L.P. Feedwater System	L.P. Heater Controls (Water Induction Protection)		Conductivity Probe		PROBE, GUIDED WAVE RADAR 26"		In Stock
L.P. Feedwater System	Deerator System	Level Control	Level Switch		SWITCH, LEVEL MOBREY		On Order
L.P. Feedwater System	Deerator System	Level Control	Level Transmitter		TRANSMITTER, LEVEL		In Stock
L.P. Feedwater System	Deerator System	Level Control	Relay		RELAY, PLUG-IN 12 PIN AC		In Stock
L.P. Feedwater System	Ammonia System		Bulk Chemical		AMMONIUM HYDROXIDE, 20% TOTE		In Stock
L.P. Feedwater System	Deerator System		NRV Valves		GASKET, S&K 7450397V0010		In Stock
L.P. Feedwater System	Deerator System		NRV Valves		O-RING, S&K 7550144V0090		In Stock
L.P. Feedwater System	Deerator System		NRV Valves		PACKING, S&K 24"		In Stock
L.P. Feedwater System	Deerator System		NRV Valves		PACKING, S&K 16"		In Stock
L.P. Feedwater System	Deerator System		NRV Valves		PACKING, S&K 12"		In Stock
L.P. Feedwater System	Deerator System		NRV Valves		SEAL, S&K 75G0181V0020		In Stock
L.P. Feedwater System	L.P. Heaters		NRV Valves - #1&2 L.P. Heaters		GASKET, S&K 6750064V0010		In Stock
L.P. Feedwater System	L.P. Heaters		NRV Valves		O-RING, S&K 7550144V0010		In Stock
L.P. Feedwater System	L.P. Heaters		NRV Valves		PACKING, S&K 75G0100V0040		In Stock
L.P. Feedwater System	L.P. Heaters		NRV Valves		PACKING, S&K 75G0100V0040		In Stock
L.P. Feedwater System	L.P. Heaters		NRV Valves		SEAL, S&K 75G0181V0050		In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 4 of 22

Asset	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
				Notes	Inventory Description	
L.P. Feedwater System	Polymer Bypass Valve	Valve		Non-Stock is OK since there are full rebuild items identified and stocked	VALVE,FISH 5080326PTBNN	Non-Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2)	Valves	Valve		VALVE KIT, BALL 3	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2)	Valves	Actuator		ACTUATOR KIT,WORCH D-38	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2)	Valves	Valve		VALVE KIT, BALL 2	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2)	Valves	Actuator		ACTUATOR KIT,WORCH C-38	In Stock
Main Steam & Reheat Steam, Turbine Drains	Vacuum Trip Device		Pressure Transmitter - Unit 1		TRANSMITTER,PRESS .30-0"	In Stock
Turbine Generator System Stage 1	Governor	Governor	Mark 5 System - cable assemblies		CABLE ASSY SERVO G.E.	In Stock
Turbine Generator System Stage 1	Governor	Governor	Mark 5 System - 50 gal. Intercept Control Valve Servos		VALVE,SERVO 50.0 GPM	In Stock
Turbine Generator System Stage 1	Governor	Governor	Mark 5 System - 50 gal. Main Control Valve Servos		VALVE,SERVO 50.0 GPM	In Stock
Turbine Generator System Stage 1	Governor	Governor	Mark 5 System - 6 gal. Intercept Control Valve Servos (scram)		VALVE,SERVO 9.0-11.0 GPM	In Stock
Turbine Generator System Stage 1	Governor	Governor	Mark 5 System - 6 gal. Main Stop Valve Servos		VALVE,SERVO 9.0-11.0 GPM	In Stock
Turbine Generator System Stage 1	Governor	Governor	Linear Variable Differential Transducer for Intercept Control Valve & Main Control Valve		TRANSDUCER,GE	In Stock
Turbine Generator System Stage 1	Governor	Governor	Linear Variable Differential Transducers for 1 per Main Stop Valve		TRANSDUCER,GE	In Stock
Turbine Generator System Stage 1	Governor	Governor	Cable		CABLE SET,FLUID POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	Valve		VALVE,FLUID POWER PILOT	In Stock
Turbine Generator System Stage 1	Governor	Governor	Sensor		SENSOR,FLUID POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	Coil		COIL,FLUID POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	Go Switch - Limit Switches		SWITCH,LIMIT GO LEVER	In Stock
Turbine Generator System Stage 1	Governor	Governor	Cable Set		CABLE SET,FLUID POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	Valve		VALVE,FLUID POWER PILOT	In Stock
Turbine Generator System Stage 1	Governor	Governor	Sensor		SENSOR,FLUID POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	Coil		COIL,FLUID POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	O-Ring Kit		O-RING,KIT,FLUID POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	RES,500HM,5%,40 WATT		RESISTOR,500HM	In Stock
Turbine Generator System Stage 1	Governor	Governor	DIODE,MOD,1200V,45A,SKK046/12		DIODE,MOD,1200V	In Stock
Turbine Generator System Stage 1	Governor	Governor	RELAY		RELAY,12LIGA115Z	In Stock
Turbine Generator System Stage 1	Governor	Governor	CPF MK5 CONTROL POWER		CONTROL,MK5 POWER	In Stock
Turbine Generator System Stage 1	Governor	Governor	TERMINATOR,93 OHMS		TERMINATOR,93 OHMS	In Stock
Turbine Generator System Stage 1	Governor	Governor	RESISTOR		RESISTOR,323A2354P1	In Stock
Turbine Generator System Stage 1	Governor	Governor	RESISTOR		RESISTOR,323A2354P2	In Stock
Turbine Generator System Stage 1	Governor	Governor	RES,100 OHM		RESISTOR,100 OHM	In Stock
Turbine Generator System Stage 1	Governor	Governor	CAP,METALIZED MYLAR		CAP,METALIZED MYLAR	In Stock
Turbine Generator System Stage 1	Governor	Governor	MKV, C-Core Terminal Board		TERMINAL BOARD,MKV C-CORE	In Stock
Turbine Generator System Stage 1	Governor	Governor	MKV, Terminal Board, Digital I/O		TERMINAL BOARD,DIGITAL,I/O	In Stock
Turbine Generator System Stage 1	Governor	Governor	MKV, Terminal Board, Digital I/O		TERMINAL BOARD,DIGITAL,I/O	In Stock
Turbine Generator System Stage 1	Governor	Governor	MKV, Terminal Board, Relay/Solenoid		TERMINAL BOARD,MKV RELAY	In Stock
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, Terminal Board,		TERMINAL BOARD,MKV RELAY	In Stock
Turbine Generator System Stage 1	Governor	Turbine Control System	Relay/Solenoid		TERMINAL BOARD,MKV RELAY	In Stock
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, C-Core Terminal Board		TERMINAL BOARD,MKV P-CORE	In Stock
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, Terminal Board		TERMINAL BOARD,(R-S-T)	In Stock
Turbine Generator System Stage 1	Governor	Turbine Control System	Main Control Card	New no longer available, reman only	BOARD,GE DS2005DCG4A	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 5 of 22

Asset	System	Sub-System	Asset	Defined Spare	Notes	Critical Spare		Inventory Status
						Inventory Description		
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, LAN Comm Interface Card			BOARD,GE DS200SLCCC G3A/PS	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV,Thermocouple Terminal Board			TERMINAL BOARD,THERMOCOUPLE	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV,TERM,BD @RS-T TC			TERMINAL BOARD,MKV	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKVe, Analog I/O Terminal Board			TERMINAL BOARD,ANALOG I/O	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV,TERM BD (R-S-T) EXT			TERMINAL BOARD,(R-S-T) EXT	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, Common Analog Card	New no longer available, remain only		BOARD,GE DS200TCAG1B	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, DIG. I/O BD. CONF. C			BOARD,GE DS200TCDAH1B/PS	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, Emergency Overspeed Card	New no longer available, remain only, Has age sensitive components,		BOARD,GE DS200TCERG1B	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, COMM. CIRCUITS FOR T	Has age sensitive components		BOARD,GE DS200TCPDG1B	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	PDIM, Switch & Fuse Card			BOARD,GE DS200TCPGS1A	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, DC INPUT PWRR SUPPLY	New no longer available, remain only, Has age sensitive components,		BOARD,GE DS200TCQAG1B	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, Analog I/O Card	New no longer available, remain only		CARD, EXTENDED MKV (RST)	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, (RST) Extended Analog I/O Card	New no longer available, remain only		BOARD,GE DS200TCQC91B	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, BOARD-(RST) OVERFLOW	New no longer available, remain only		BOARD,GE DS200TCRAG1A/PS	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, Relay Output Card	New no longer available, remain only		BOARD,GE DS200TCSTG1A	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MKV, Turbine Trip Card	New no longer available, remain only		MODULE,ACT TO DC	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	MODULE,ACT TO DC			SPARE KIT,MKV	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	(Commissioning Kit) Fuses, Resistors , Diodes, Relays			PUMP,DC LUBE OIL	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	DC Oil Pump	Pump		MOTOR,DC LUBE OIL PUMP	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	DC Motor	Motor		SWITCH,PRESS 0-150 PSI	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Pressure Switches	Switch		SWITCH,PRESS 0-150 PSI	On Order	
Turbine Generator System Stage 1	Governor	Turbine Control System	Fluid Pumps	Pump		PUMP/HYD FLUID POWER UNIT	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Hydraulic Fluid System	Shaft		SHAFT,IR 10 (TYPE 2 ERVH)	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Turbine Lube Oil System	AC Oil Pumps		IMPELLER,IR 2RVH3DX1-813	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Turbine Lube Oil System	AC Oil Pumps		SLEEVE,IR RAND 175B135NX1B-204	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Turbine Lube Oil System	AC Oil Pumps		KEY,IMPELLER IR 11A9C37	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Turbine Lube Oil System	AC Motor		MOTOR,ELECT 20HP 575VAC	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Pressure Switch 2	Switch		SWITCH,PRESS 0-150 PSI	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Main Steam Valve - Actuator	Bushing		BUSHING,FISH 1E845714012	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Main Steam Valve - Actuator	Diaphragm		DIAPHRAGM,FISH 2E8598022202	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Main Steam Valve - Actuator	Repair Kit		ACTUATOR KIT,FISH R667X000702	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Main Steam Valve - Body	Gasket		GASKET SET,FISH RASKEITX232	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Main Steam Valve - Body	Packing		PACKING KIT,FISH BRACKX0011	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Main Steam Valve - Body	Positioner		POSITIONER,FISH DYC6200	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Dump Control Valve - Actuator	Diaphragm		DIAPHRAGM,FISH 2N130902202	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Dump Control Valve - Actuator	Repair Kit		ACTUATOR KIT,FISH R667X000702	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Dump Control Valve - Body	Gasket		GASKET SET,FISH RASKEITX232	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Dump Control Valve - Body	Plug/System		PLUG/STEM,FISH 7A3965X052	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Dump Control Valve - Body	Cage		CAGE,FISH 20A3245X092	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Dump Control Valve - Body	Ring		RING,FISH 17A3991X022	In Stock	
Turbine Generator System Stage 1	Governor	Turbine Control System	Dump Control Valve - Body	Seat Ring		RING,FISH 20A3260X152	In Stock	
Units 1 & 2 Air & Flue Gas	Furnace Pressure TX (Trip)		Pressure Transmitter			TRANSMITTER,DP -8000-8000kPa	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 6 of 22

Asset	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
				Notes	Inventory Description	
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Baskets	Basket Set	To be ordered & stocked as required	BASKET SET/AIR HEATER 21-1/2"	Non-Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Baskets	Basket Set	To be ordered & stocked as required	BASKET SET/AIR HEATER U1	Non-Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Rotating Element & Bearings	Bearing		BEARING,BALL 23034CCK/C3W33	In Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Rotating Element & Bearings	Seal		SEAL, HOWDEN 68-01-615	In Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Drive System	Coupling		COUPLING, STEELFLEX 1-18 S4	In Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Drive System	Air Motor		AIR MOTOR, ING. RAND	In Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Drive System	Motor		MOTOR,HEATER 1/3HP (XL GEAR)	In Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Soot Blowers	Sleeve		SLEEV.E, RELIANCE 411629-6A	In Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Soot Blowers	Coupling		COUPLING,BORE 3/4X5/8	In Stock
Units 1 & 2 Air & Flue Gas	Rotary Air Heaters	Soot Blowers	Roller Assembly		ROLLER ASSEMBLY	In Stock
Units 1 & 2 Fuel Oil System	Combustion Control Valve	Combustion Control Valve	Gasket		GASKET SET, FISH R/GASKETX182	In Stock
Units 1 & 2 Fuel Oil System	Combustion Control Valve	Combustion Control Valve	Stud		STUD,DEV 0283236	In Stock
Units 1 & 2 Fuel Oil System	Combustion Control Valve	Combustion Control Valve	Repair Kit		ACTUATOR KIT,FISH R667X000402	In Stock
Units 1 & 2 Fuel Oil System	Combustion Control Valve	Combustion Control Valve	Cage		CAGE,FISH 20224033272	In Stock
Units 1 & 2 Fuel Oil System	Combustion Control Valve	Combustion Control Valve	Plug/Stem		PLUG ASSY,FISH 1V6575X0052	In Stock
Units 1 & 2 Fuel Oil System	Combustion Control Valve	Combustion Control Valve	Ring		RING,FISH 1U222646172	In Stock
Units 1 & 2 Fuel Oil System ¹	Combustion Control Valve	Combustion Control Valve	Bushing		BUSHING,FISH 1E682814012	On Order
Units 1 & 2 Fuel Oil System	Atomizing Steam Valve	Atomizing Steam Valve	2" Flanged Valve		VALVE,FISH ATOM STEAM	In Stock
Units 1 & 2 Fuel Oil System	Main Fuel Oil Trip Valve	Main Fuel Oil Trip Valve	Flanged Valve		VALVE,FISH F.O. TRIP	In Stock
Units 1 & 2 Fuel Oil System	Header Pressure Control Valve	Header Pressure Control Valve	Repair Kit		PACKING KIT,FISH R/PACKX00012	In Stock
Units 1 & 2 Fuel Oil System	Header Pressure Control Valve	Header Pressure Control Valve	Diaphragm		DIAPHRAGM/FISH 2B670002202	In Stock
Units 1 & 2 Fuel Oil System	Fuel Oil Pumps	Fuel Oil Pumps	PUMP,IMO C324		PUMP,IMO C324 (COMPLETE)	In Stock
Units 1 & 2 Fuel Oil System	Mechanical Seal	Mechanical Seal	Seal		SEAL,MECHANICAL,FUEL C324	In Stock
Units 1 & 2 Fuel Oil System	Short Recirculation Valve	Short Recirculation Valve	Gasket Set		GASKET SET,FISH R/GASKETX312	In Stock
Units 1 & 2 Fuel Oil System	Short Recirculation Valve	Short Recirculation Valve	Packing		PACKING KIT,FISH R/PACKX00012	In Stock
Units 1 & 2 Fuel Oil System	Short Recirculation Valve	Short Recirculation Valve	Ring		RING,FISH 1U222535072	In Stock
Units 1 & 2 Fuel Oil System	Short Recirculation Valve	Short Recirculation Valve	Plug/stem		PLUG/STEM,FISH 1U8350X0022	In Stock
Units 1 & 2 Fuel Oil System	Short Recirculation Valve	Short Recirculation Valve	Cage		CAGE,FISH 2U215033272	In Stock
Units 1 & 2 Fuel Oil System	Long Recirculation Valve	Long Recirculation Valve	Gasket		GASKET,FISH 10A154X012	In Stock
Units 1 & 2 Fuel Oil System	Long Recirculation Valve	Long Recirculation Valve	Ring		RING,FISH 1U222833072	In Stock
Units 1 & 2 Fuel Oil System	Long Recirculation Valve	Long Recirculation Valve	Diaphragm		DIAPHRAGM/FISH 2N1269/02202	In Stock
Units 1 & 2 Fuel Oil System	Long Recirculation Valve	Long Recirculation Valve	Cage		CAGE,FISH 2U231833272	In Stock
Units 1 & 2 Fuel Oil System	Fuel Oil Heaters	Fuel Oil Heaters	Gaskets		Repair Parts Stocked Ref CN116397	
Units 1 & 2 Fuel Oil System	Fuel Oil Heaters	Fuel Oil Heaters	Tube Bundles		GASKET,FUEL OIL HEATER HEATER,FUEL OIL STAGE 1	In Stock
Units 1 & 2 Fuel Oil System	Burners	Oil Valve	Oil, Steam & Scavange Valves - All Same		Check. To be ordered as required.	Non-Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Cage		VALVE,BALL 3/4 C/W PNEU	In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Plug/stem		CAGE,FISH 42B357/0X012	In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Ring		PLUG/STEM,FISH 36A5366X062	In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Ring		RING,FISH 26A5285X012	In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Ring		RING,FISH 26A5299X052	In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Ring		RING,FISH 10A5411X022	In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Pin		PIN,FISH 1V334035072	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 7 of 22

Asset	System	Sub-System	Asset	Defined Spare	Notes	Critical Spare		Inventory Status
						Inventory Description		
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Gasket			GASKET, FISH 18A2810X012		In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Gasket			GASKET, FISH 26A5314X012		In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Ring			RING, FISH 10A5410X012		In Stock
Units 1 & 2 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve - Unit 1	Packing			PACKING, FISH 1R290601012		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	Element Assembly (Volute)		Rebuildable item If this is not in stock, it is out for rebuild.	ELEMENT ASSY,VOLUTE/ROTATING		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	Bushing			BUSHING, BI 2165071LG		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	Shaft Driven Oil Pump			PUMP,BJ DWG C1F-238		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	Ring			RING, BI 612987-EH		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	Ring			RING, BI 634599-BG		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	Shoe			SHOE ASSY, BI 631163-KD		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	Cover			COVER, BI 308952-SA		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Pumps - Unit 1 E & W	3000HP Motor, 4160Vac (two styles of motor for Stage I, one each stocked off-site)		Motor stored off site via service contract	SCIM, S/N# 1026366788, frame MGp500B, 300hp, 4160VAC, 60hz		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Main Feedwater Low Load Control	Gasket			GASKET, FISH 12B7100X082		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Main Feedwater Low Load Control	Seal			SEAL,FISH 10A4215X012		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Main Feedwater Low Load Control	Ring			RING,FISH 10A4217X012		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Main Feedwater Low Load Control	Ring			RING,FISH 10A4219X012		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Main Feedwater Low Load Control	Ring			RING,FISH 22B9344X012		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Main Feedwater Low Load Control	Plug/Stem			PLUG/STEM,FISH 38A0014X062		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit #1 - All HP Heaters	Level Transmitter			TRANSMITTER, DP-0-120° H2O		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit # 2 - HP Heater # 4 & 6	Level Transmitter			TRANSMITTER, DP-0-120° H2O		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit # 2 -HP Heater # 5	Level Transmitter			TRANSMITTER, DP-0-120° H2O		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit 1 - All HP Heaters	Aquarian Alarm Modules			MODULE,AQUARIAN		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit # 2 - Heater # 4 & 6	Aquarian Alarm Modules			MODULE,AQUARIAN		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit # 2 -HP Heater # 5	Aquarian Alarm Modules			MODULE,AQUARIAN		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit # 2 - All HP Heaters	Conductivity Probe		Hi-Level Switch	PROBE,CONDICTIVITY		Non-Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit # 1 & 2 - All HP Heaters	Relay			RELAY,PLUG-IN 12 PIN AC		In Stock
Units 1 & 2 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Unit 1 & 2	Solenoid			SOLENOID,ASCO 8300 125 VDC		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Suction Valve Limit Switch	Oil Tight Limit Switch			SWITCH, LIMIT AB 802T-B		In Stock
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Suction Valve	Packing			PACKING, GRAFTOL 1IDX-1/2OD		In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 8 of 22

Asset	Sub-System	Asset	Defined Spare	Notes	Critical Spare		Inventory Status
					Inventory Description		
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Gasket		GASKET,HOP 30037592	In Stock	
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Spindle		SPINDLE,HOP 44574-011	In Stock	
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Nut		NUT,HOP 35224-508	In Stock	
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Stop		STOP,HOP 8 VALVE 24930W	In Stock	
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Belt		BELT ASSY,HOP 44511-001	In Stock	
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	NRV/Valves - Heater # 4	8"-150# Gasket Kit		GASKET,S&K 7450357V0010	In Stock	
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	NRV/Valves - Heater # 5	8"-300# Gasket Kit		GASKET,S&K 7450397V0010	In Stock	
Units 1 & 2 H.P. Feedwater System	H.P. Heaters	NRV/Valves - Heater # 6	8"-300# Gasket Kit		GASKET,S&K 7450397V0010	In Stock	
Units 1 & 2 H.P. Feedwater System	Steam Drum	Level Control Transmitters	Level Transmitter		TRANSMITTER,PRESS 5-800	In Stock	
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Suction Line Safety Valve	1/2" x 1" Valve		VALVE,RELIEF 1/2"110# SE	In Stock	
Units 1 & 2 H.P. Feedwater System	Boiler Feed	Boiler Feed Recirculation Valve to DA	4" Valve		VALVE,GATE 4 CS BV 300#	In Stock	
Combustion Air & Gas Instruments	Burner Management	Positioner	2.5" x 5 "Pneumatic PowerPositioner (Hagan)		VALVE ASSY,373218-001	In Stock	
L.P. Feedwater System	Condensate Extraction Pumps	Pump	Coupling		COUPLING,METASTREAM BEARING,JOURNAL MP 215878E	In Stock	
L.P. Feedwater System	Condensate Extraction Pumps	Pump	Bearing	C. Thangasamy to contact	IMPELLER,MAT PLA 27881-P	Non-Stock	
L.P. Feedwater System	Condensate Extraction Pumps	Pump	Impeller		IMPELLER,MAT PLA 27882-P	In Stock	
L.P. Feedwater System	Condensate Extraction Pumps	Pump	Impeller		O-RING,M&P 775C	In Stock	
L.P. Feedwater System	Condensate Extraction Pumps	Pump	Impeller		O-RING,MAT PLA 775D	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Cable	Cable		CABLE,BATTERY 1/0	In Stock	
Turbine Generator System Stage 1	Governor	Governor	Mark 5 System - speed probes		PROBE,SPEED PICKUP	In Stock	
Turbine Generator System Stage 1	Turbine lube Oil System	Pressure Switch 1	Switch		SWITCH,PRESS 0-150 PSI	In Stock	
Turbine Generator System Stage 1	Steam Seal Regulator	Dump Control Valve - Body	Positioner		POSITIONER,FISH DVC6200	In Stock	
Condenser Air Extraction System	Mechanical Vacuum Pumps	Motor	Motor		MOTOR,ELECT 50HP/460V/60Hz	In Stock	
Generator	Stator	PT Cubicle	Potential Transformer [PT]		TRANSFORMER,GE 765X	In Stock	
Generator	Stator	Stand Off Insulators	Stand Off Insulator		BUSHING,HIGH VOLTAGE GE	In Stock	
Turbine Generator System Stage 1	Governor	Governor	Truck V-Fast Cables		CABLE SET,FLUID POWER	In Stock	
Generator	Stator	Stator and Brush Rigging Assembly	Brush		BRUSH,GENERATOR U1 & U2	In Stock	
Units 1 & 2 Air & Flue Gas	F.D. Fans	Unit 1& 2 Fans	Inboard Bearing Liner		LINER,BEARING 6"	In Stock	
Units 1 & 2 Air & Flue Gas	F.D. Fans	Unit 1& 2 - Fans	Outboard Bearing Liner		SLEEVE,BEARING 6"	In Stock	
Units 1 & 2 Air & Flue Gas	F.D. Fans	Unit 1& 2 - Fans	Bearing Set		BEARING SET,SLEEVE 6"	In Stock	
Units 1 & 2 Air & Flue Gas	F.D. Fans	Unit 1& 2 - Fans	200A Power Cell		POWER CELL,SIEMENS 200A	In Stock	
Units 1 & 2 Air & Flue Gas	F.D. Fans	Unit 1& 2 - Fans	1500HP Motor, 4160VAC	Motor stored off site via service contract	SCIM, serial# 102684/2643, frame MGP500C, 150HP, 4160VAC, 60Hz	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Panel	400A DC Breaker		BREAKER,DC KD240F 400A	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Panel	40A DC Breaker		BREAKER,DC HF2004 40A	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-116	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-114-1	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-111-1	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-107-2	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-107-2	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-107-2	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-107-2A	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Electronic Control Cards		CARD,CIGENTEC 81-112-2	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger	Rectifier	Individual replacement components stocked	RECTIFIER,CIGENTEC 323-230	In Stock	
Powerhouse and Switchyard Single Line	25kV DC System	Charger Gigentic	Charger		CHARGER,BATTERY 250VDC	Non-Stock	
Circulating Water and Screen Wash System	CW Discharge Valves	Valve	36 ' Butterfly Valve		VALVE,BUTTERFLY 36"	In Stock	
Circulating Water and Screen Wash System	CW Discharge Valves	Actuator	CW Butterfly Valve Actuator		ACTUATOR ASSY,ROTOR	In Stock	
Circulating Water and Screen Wash System	CW Pumps	Motor	Coils		COILS,STAGE 2 MOTOR	In Stock	
Combustion Air & Gas Instruments	Burner Management	Burner Automation	Network Interface Modules		MODULE,NETWORK INTERFACE	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 9 of 22

Asset	Sub-System	Asset	Defined Spare	Notes	Critical Spare		Inventory Status
					Inventory Description		
Combustion Air & Gas Instruments	Burner Management	Burner Automation	Master Fuel Trip Relays		RELAY SD 850IXUDO	In Stock	
Combustion Air & Gas Instruments	Burner Management	Burner Automation	DCS Control Processor		MODULE,PROCESSOR FOXBORO	In Stock	
Combustion Air & Gas Instruments	Elevation Oil Flow Transmitter	Meter & Transmitter			FLOWMETER,PROMASS 83-F40	In Stock	
Condenser Air Extraction System	Burner Management	Positioner			POSITIONER, FISH DUC6200	In Stock	
Generator	Vacuum Breakers	6" Flange Vacuum Breaker			VALVE,AIR & VACUUM 6 FLG	In Stock	
Generator	Stator	Brush			BRUSH,GENERATOR U3	In Stock	
Generator	Synchronous Condenser	Bearing Pad			PAD,BEARING U3 SYNC COND	In Stock	
Generator	Synchronous Condenser	Seal Ring			RING,SEAL U3 SYNC COND	In Stock	
Generator	Synchronous Condenser	Thrust bearing			BEARING,THRUST U3 SYNC COND	In Stock	
Generator	Synchronous Condenser	Thrust bearing			BEARING,THRUST U3 SYNC COND	In Stock	
Generator	Synchronous Condenser	Seal Ring			RING,SEAL U3 SYNC COND	In Stock	
Generator	Synchronous Condenser	Thermocouple			THERMOCOUPLE,U3 SYNC COND	In Stock	
Generator	Seal Oil System	Bellows			BELLOWS,HITACHI	In Stock	
Generator	Seal Oil System	Gaskets			GASKET,HITACHI	In Stock	
Generator	Seal Oil System	Gaskets			GASKET,HITACHI	In Stock	
Generator	Seal Oil System	Gaskets			GASKET,HITACHI	In Stock	
Generator	Exciter	Exciter Control System	Converter		CONVERTER,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	ECT Panel		ECT PANEL,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	Controller		CONTROLLER,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	Computer		COMPUTER,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	Firing Board		BOARD,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	Message Module		MODULE,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	Input Coupling		INPUT COUPLING UNIT,ABB	In Stock	
Generator	Exciter	Exciter Control System	Power Supply		POWER SUPPLY,ABB	In Stock	
Generator	Exciter	Exciter Control System	Crowbar		CROWBAR,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	Murr		MURR,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	Resistor		RESISTOR,ABB EXCITER	In Stock	
Generator	Exciter	Exciter Control System	I/O Board		BOARD,ABB COMBINED I/O	In Stock	
Generator	Exciter	Exciter Control System	Field Breaker		BREAKER,FIELD ABB E2/E	In Stock	
Generator	Stator	Stand Off Insulators	Insulator Bushing		BUSHING,HIGH VOLTAGE HIT	In Stock	
Generator	Stator	PT Cubicle	Potential Transformer (PT)		VOLTAGE TRANSFORMER,ABB VIZZ-	In Stock	
Generator	Stator	PT Cubicle	Fuse		FUSE,GE EJ0-1-C58840561	In Stock	
Generator	Light Oil	Trip Valve			VALVE KIT,JAMES RIB5WMT	In Stock	
Generator	Light Oil	Igniter Control Box			SOLENOID,ASCO 83422C1	In Stock	
Generator	Light Oil	Igniter Control Box			SOLENOID,ASCO 8262G232	In Stock	
Generator	Light Oil	Igniter Control Box			ACTUATOR,PNEU R16C	In Stock	
Generator	Light Oil	Igniter Control Box			XFM,IGNITION 120V 60C	In Stock	
Generator	Light Oil	Igniter Control Box			BOX,IGNITOR C/W CABLES N-6	In Stock	
Generator	Light Oil	Igniter Control Box			SCANNER,FOSSIL 9100-1000	In Stock	
Generator	Light Oil	Igniter Control Box			MICROSWITCH,16CX12-D01	In Stock	
Generator	Light Oil	Igniter Control Box			VALVE,BALL 1/4" 13 IGNITOR	In Stock	
L.P. Feedwater System	L.P. Heater Controls (Water Induction Protection)		Level Transmitter LP Heater #1		TRANSMITTER,LEVEL	In Stock	
L.P. Feedwater System	L.P. Heater Controls (Water Induction Protection)		Aquarian Alarm Modules		MODULE,AQUARIAN	In Stock	
L.P. Feedwater System	L.P. Heater Controls (Water Induction Protection)		Solenoid		SOLENOID,ASCO 8300 125 VDC	In Stock	
L.P. Feedwater System ²	L.P. Heater Controls (Water Induction Protection)		Relay		RELAY,OMRON M8MXP-DC125	In Stock	
L.P. Feedwater System	Deaerator System	Solenoid			PROBE,CONDICITIVITY	On Order	
L.P. Feedwater System	Deaerator System	Gauge Glasses			Gauge,Glass 3/4x48	In Stock	
L.P. Feedwater System	Deaerator System	Level Switch			SWITCH ASSY,MAG 39-7401-052	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 10 of 22

Asset	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
				Notes	Inventory Description	
L.P. Feedwater System	Deaerator System	Level Control	Solenoid		SOLENOID,ASCO 8320G184MV0	In Stock
L.P. Feedwater System	Deaerator System	Level Control	Level Transmitter		TRANSMITTER, DP 0-120" H2O	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Repair Kit		VALVE KIT,BALL 8"	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Repair Kit		ACTUATOR KIT,WORCH C-38	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Valve		VALVE,FISH 8560-1052-36105	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Disc		DISC,FISH 75B1036X102	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Pin		PIN,FISH 75B1122X052	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Pin		PIN,FISH G13725K0022	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Ring		RING,FISH 75B0311X032	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Shaft		SHAFT,FISH 75B0014X012	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Spring		SPRING,FISH 75B0012X012	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Packing		PACKING,FISH 12A8951X022	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Control Valves	Bearing		BEARING,FISH 75B1076X012	In Stock
L.P. Feedwater System	L.P. Heaters	NRV Valves - #2 L.P Heater	20" Dia		GASKET,COVER HIT	In Stock
L.P. Feedwater System	L.P. Heaters	NRV Valves - #1 L.P Heater	24" Dia		GASKET,COVER HIT	In Stock
L.P. Feedwater System	Deaerator System	NRV Valves (2)	14" Dia on DA		GASKET,COVER HIT	In Stock
L.P. Feedwater System	Deaerator System		Disc		DISC,VALVE SAFETY RELIEF	In Stock
L.P. Feedwater System	Polymer Bypass Valve		Parts to Repair		VALVE,FISH 8560-1052-36105	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Valves	Valve Kit		VALVE KIT,BALL 3	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Valves	Actuator Kit		ACTUATOR KIT,WORCH D-38	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Valves	Valve Kit		VALVE KIT,BALL 2	In Stock
L.P. Feedwater System	Condensate Polishers (Units 1, 2, 3)	Valves	Actuator Kit		ACTUATOR KIT,WORCH C-38	In Stock
Main Steam & Reheat Steam, Turbine Drains	Vacuum Unloading Device	Bellows			BELOW ASSY,HIT L1000-1	In Stock
Powerhouse and Switchyard Single Line	25kV DC System	Charger	400A DC Breaker		BREAKER,DC KD2400F 400A	In Stock
Powerhouse and Switchyard Single Line	25kV DC System		40A DC Breaker		BREAKER,DC HF2040 40A	In Stock
Turbine Generator System Stage 2	Governor	Governor	Piston		PISTON RING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	Oil Seal		OIL SEAL,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	O-Ring		O-RING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	O-Ring		O-RING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	Bushing		BUSHING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	Packing		PACKING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	Bushing		BUSHING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	O-Ring		O-RING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	Bearing		BEARING,HITACHI LOAD LIMIT	In Stock
Turbine Generator System Stage 2	Governor	Governor	Bearing		BEARING,HITACHI LOAD LIMIT	In Stock
Turbine Generator System Stage 2	Governor	Governor	Piston		PISTON RING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	Packing		PACKING,HITACHI	In Stock
Turbine Generator System Stage 2	Governor	Governor	Sleeve		SLEEVE,HITACHI	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 11 of 22

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 12 of 22

Asset	Sub-System	Asset	Defined Spare	Notes	Critical Spare		Inventory Status
					Inventory Description		
Turbine Generator System Stage 2	Reheat Steam Chest Assembly	Reheat/ICV Valves	Pin		PIN HIT 10P06115872	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Steam Seal Regulator	Bushing	Pressure Transmitter - Unit 3	TRANSMITTER,PRESS 0-200	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	2" Valve	Diaphragm		BUSHING,FISH 1E845714012	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Main Steam Control Valve - Actuator			DIAPHRAGM,FISH 2E859602202	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Main Steam Control Valve - Actuator		Actuator repair kit	ACTUATOR KIT,FISH R667X000502	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Main Steam Control Valve - Body	Packing Kit		PACKING KIT,FISH RPACKXX0011	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Main Steam Control Valve - Positioner			POSITIONER,FISH DYCG6200	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Auxiliary Steam Control Valve - actuator			ACTUATOR KIT,FISH R470X000032	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Aux Steam Control Valve - Body - Unit 3			BODY,VALVE FISH 3N192029022	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Dump Control Valve - Actuator - Repair Kit - Unit 3			ACTUATOR KIT,FISHER R667	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Ring			RING,FISH 1TA3990X022	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Ring			RING,FISH 1U508039102	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Pin			PIN,FISH 1V3226035072	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Cage			CAGE,FISH 2U505939102	In Stock	In Stock
Turbine Generator System Stage 2	Steam Seal Regulator	Plug			PLUG,FISH 27A3953X012	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Series 8500 size 95 w/ 95° @ 100% width wheel			THRUST PLATE KIT,DODGE 132221	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Drive Motor	Formed Coils		COIL,WINDING U3 FD FAN	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Fan Assembly	Liner		LINER ASSY,DODGE 132423	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Fan Assembly	Collar		COLLAR,DODGE 132154	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Fan Assembly	Opposite side bearing		LINER ASSY,DODGE 132951	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Fan Assembly	2 - Temperature probes installed in bearings		THERMOCOUPLE,TYPE T	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Fan Assembly	Falk Steel/Flex coupling		COUPLING,STEEL/FLEX GRID	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	2 - independent bearing pedestals	Gasket		GASKET,DODGE 132170	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	Outlet damper	Damper	To be ordered & stocked as required	DAMPER,STOCKBRIDGE 0.866"	Non-Stock	Non-Stock
Unit 3 Air & Flue Gas	F.D. Fans	Outlet damper	Damper	To be ordered & stocked as required	DAMPER,STOCKBRIDGE 1.004"	Non-Stock	Non-Stock
Unit 3 Air & Flue Gas	F.D. Fans	variable inlet vanes	Actuator Repair Kit		DRIVE KIT,BAILEY 532694C1	In Stock	In Stock
Unit 3 Air & Flue Gas	F.D. Fans	variable inlet vanes	Actuator repair kit		DRIVE KIT,BAILEY 25111A0	In Stock	In Stock
Unit 3 Air & Flue Gas	Rotary Air Heaters	Gearbox			GEARBOX,AIR HEATER U3	In Stock	In Stock
Unit 3 Air & Flue Gas	Rotary Air Heaters	Pneumatic Drive System	Air Drive Motor		AIR MOTOR,ING RND	In Stock	In Stock
Unit 3 Air & Flue Gas	Rotary Air Heaters	Baskets	Basket Set	To be ordered & stocked as required	BASKET SET,AIR HEATER 22-1/2"	Non-Stock	Non-Stock
Unit 3 Air & Flue Gas	Rotary Air Heaters	Baskets	Basket Set	To be ordered & stocked as required	BASKET SET,HOT END 22-1/2	Non-Stock	Non-Stock
Unit 3 Air & Flue Gas	O2 Analyzers		Probe - In Stock		PROBE,OXYGEN ANALYZER	In Stock	In Stock
Unit 3 Air & Flue Gas	O2 Analyzers		Analyser		ANALYZER,ROSE 3000 OXY	In Stock	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Trip Valve	Gasket		GASKET SET,FISH RGASKETX362	In Stock	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Trip Valve	Packing		PACKING KIT,FISH RPACKXX0002	In Stock	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Trip Valve	Actuator		ACTUATOR KIT,FISH R667X000502	In Stock	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Trip Valve	Regulator		REGULATOR KIT,FISH WR67AFRX011	In Stock	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Trip Valve	Bushing		BUSHING,FISH 1E845714012	In Stock	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Trip Valve	Diaphragm		DIAPHRAGM,FISH 2E859802202	In Stock	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Trip Valve	Cage		CAGE,FISH 2U236033272	In Stock	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 13 of 22

Asset	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
				Notes	Inventory Description	
Unit 3 Fuel Oil System		Combustion Control Valves	Ring		RING,FISH 1U217305092	In Stock
Unit 3 Fuel Oil System		Combustion Control Valves	Seat		SEAT,FISH 1U322045172	In Stock
Unit 3 Fuel Oil System		Combustion Control Valves	Plug/Stem		PLUG/STEM,FISH 1V6771X0042	In Stock
Unit 3 Fuel Oil System		Combustion Control Valves	Cage		CAGE,FISH 2U15333272	In Stock
Unit 3 Fuel Oil System		Combustion Control Valves	Gasket		GASKET SET,FISH RGASKETX242	In Stock
Unit 3 Fuel Oil System		Combustion Control Valves	Packing		PACKING KIT,FISH RPACKX00012	In Stock
Unit 3 Fuel Oil System ¹		Combustion Control Valves	Bushing		BUSHING,FISH 1E683814012	On Order
Unit 3 Fuel Oil System		Combustion Control Valves	Diaphragm		DIAPHRAGM,FISH 2B665902202	In Stock
Unit 3 Fuel Oil System		Atomizing Steam Valve	Cage		CAGE,FISH 2U22373272	In Stock
Unit 3 Fuel Oil System		Atomizing Steam Valve	Ring		RING,FISH 1U222646172	In Stock
Unit 3 Fuel Oil System		Atomizing Steam Valve	Plug/Stem		PLUG ASSY,FISH 1V6575X0052	In Stock
Unit 3 Fuel Oil System		Atomizing Steam Valve	Packing		PACKING KIT,FISH RPACKX0002	In Stock
Unit 3 Fuel Oil System ¹		Atomizing Steam Valve	Gasket		GASKET SET,FISH RGASKETX182	In Stock
Unit 3 Fuel Oil System		Diaphragm			DIAPHRAGM,FISH 2B670002202	In Stock
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Packing		PACKING KIT,FISH RPACKX0002	In Stock
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Repair Kit		ACTUATOR KIT,FISH R667X000402	In Stock
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Bushing		BUSHING,FISH 1E683814012	On Order
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Retainer		RETAINER,FISH 1V710935072	In Stock
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Disc		DISC,FISH 1V71106242	On Order
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Seat		SEAT,FISH 1V711135072	In Stock
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Diaphragm		DIAPHRAGM,FISH 2B665902202	In Stock
Unit 3 Fuel Oil System		Level Fuel Oil Trip Valves (3)	Cage		CAGE,FISH 2U227633272	In Stock
Unit 3 Fuel Oil System		Header Pressure Control Valve	Repair Kit		ACTUATOR KIT,FISH R667X000402	In Stock
Unit 3 Fuel Oil System ¹		Header Pressure Control Valve	Bushing		BUSHING,FISH 1E683814012	On Order
Unit 3 Fuel Oil System		Header Pressure Control Valve	Diaphragm		DIAPHRAGM,FISH 2B665902202	In Stock
Unit 3 Fuel Oil System		Fuel Oil Pumps	Pump		PUMP/MAIN FUEL OIL KRAL	In Stock
Unit 3 Fuel Oil System		Main Fuel Oil Recirculation Valve	1" Welded Flange Valve w/ Actuator		VALVE ASSY JAMES 1052 1"	In Stock
Unit 3 Fuel Oil System		Level Fuel Oil Recirculation Valves	3/4" Welded Valve w/ Actuator		VALVE ASSY JAMES 1052 3/4"	In Stock
Unit 3 Fuel Oil System ¹		Oil Valve	1/2" Ball Valve		VALVE KIT,JAMES RB5MT	In Stock
Unit 3 Fuel Oil System		Steam Valve	Gasket		GASKET SET,FISH RGASKETX312	In Stock
Unit 3 Fuel Oil System		Steam Valve	Packing		PACKING KIT,FISH RPACKX00012	In Stock
Unit 3 Fuel Oil System		Steam Valve	Plug/Stem		PLUG/STEM,FISH 1U2161X0082	In Stock
Unit 3 Fuel Oil System		Burners	Ring		RING,FISH 1U222546172	In Stock
Unit 3 Fuel Oil System		Burners	Cage		CAGE,FISH 2U215033272	In Stock
Unit 3 Fuel Oil System		Burners	Gasket		GASKET SET,FISH RGASKETX312	In Stock
Unit 3 Fuel Oil System		Burners	Packing		PACKING KIT,FISH RPACKX00012	In Stock
Unit 3 Fuel Oil System		Burners	Plug/Stem		PLUG/STEM,FISH 1U2161X0082	In Stock
Unit 3 Fuel Oil System		Scavenging Valve	Ring		RING,FISH 1U222546172	In Stock
Unit 3 Fuel Oil System		Scavenging Valve	Cage		CAGE,FISH 2U215033272	In Stock
Unit 3 Fuel Oil System		Boiler Feed Pumps	Shaft Assembly		CASE ASSY,BWL (INNER)	In Stock
Unit 3 Fuel Oil System		Boiler Feed Pumps	Boiler Feed		SHOE ASSY,KI-00166-A-3740	In Stock
Unit 3 Fuel Oil System		Boiler Feed Pumps	Boiler Feed		BUSHING,BWL 3106181	In Stock
Unit 3 H.P. Feedwater System		Boiler Feed Pumps	Boiler Feed		BEARING,BWL T-101204JG	In Stock
Unit 3 H.P. Feedwater System		Boiler Feed Pumps	Boiler Feed		GASKET,BWL shift 1026842642, frame MGP4500, 2350HP, 4160VAC, 60Hz	In Stock
Unit 3 H.P. Feedwater System		Boiler Feed Pumps	Boiler Feed		BEARING,HIT 9-60-2	In Stock
Unit 3 H.P. Feedwater System		Boiler Feed Pumps	Boiler Feed		BUSHING,BWL 3106181	In Stock
Unit 3 H.P. Feedwater System		Boiler Feed Pumps	Boiler Feed		BEARING ASSY,THRUST JHI-5	In Stock
Unit 3 H.P. Feedwater System		Boiler Feed Pumps	Boiler Feed		GASKET,BWL T-101204JG	In Stock
Unit 3 H.P. Feedwater System		Boiler Feed Pumps	Boiler Feed		Motor stored off site via service contract	
Unit 3 H.P. Feedwater System		Main Feed Water Control Valve	6" - EH-T valve 1500lb - Welded		DIAPHRAGM/FISH 2B6376X0	In Stock
Unit 3 H.P. Feedwater System		Main Feed Water Control Valve	1 - 10A5411X022 - Seal Ring		RING,FISH 10A5411X022	In Stock
Unit 3 H.P. Feedwater System		Main Feed Water Control Valve	1 - 13A55599X052 - O-Ring		O-RING,FISH 13A55599X052	In Stock
Unit 3 H.P. Feedwater System		Main Feed Water Control Valve	1 - 26A5299X52 - Seat Ring		RING,FISH 26A5299X52	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 14 of 22

Asset	Sub-System	Asset	Defined Spare	Notes	Critical Spare		Inventory Status
					Inventory Description		
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 27A2798X042 - Seat Ring, O-Ring		RING, FISH 27A2798X042	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 42B357D0X012 - Cage, Et%		CAGE, FISH 42B357D0X012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 36A5366X062 - Plug/Stem Bal		PLUG/STEM, FISH 136A5366X062	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	2 - 26A5314X012 - Gasket		GASKET, FISH 26A5314X012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 11872906X332 - Upper Wiper		WIPER, FISH 11872906X332	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 11873435X072 - Packing Box Ring		RING, FISH 11873435X072	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 1R290601012 - Packing Set		PACKING, FISH 1R290601012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 1R290601012 - Bushing Seal		SEAL, FISH 11R290601012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - 2R6376X0082 - Diaphragm		DIAPHRAGM, FISH 2R6376X0082	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	Main Feed Water Control Valve	1 - R667X000802 - Repair Kit		ACTUATOR KIT, FISHER R667	In Stock	
Unit 3 H.P. Feedwater System ²	All HP Heaters	Conductivity Probe			PROBE, CONDUCTIVITY	On Order	
Unit 3 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Aquarian Alarm Module			PROBE, AQUARIAN	On Order	
Unit 3 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Level Transmitter			TRANSMITTER, DP 0-120° H2O	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heater Controls (Water Induction Protection)	Relay			RELAY, OMRON MM4XP-DC125	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Bushing		SOLENOID, ASCO 8300 125 VDC	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Clip		BUSHING, DEW 08000109	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Ring		CLIP, DEW 0540097	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Ring		RING, DEW 0760093	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Screw		RING, DEW 668215DEW	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Spacer		SCREW, DEW 0440024	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Spring		SPACER, DEW 0660065	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Stem		SPRING, DEW 6580312 (3/SET)	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Stud		STEM, DEW 00400851	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Stud		STUD, DEW 0283751	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Packing		STUD, DEW 0280514	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	Nut		PACKING, DEW 6442946	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	6" Dia		NUT, DEW P71ER250	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	8" Dia		GASKET, COVER HIT	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Bypass Valves	10" Dia		GASKET, COVER HIT	In Stock	
Unit 3 H.P. Feedwater System	H.P. Heaters	Motorized Discharge Valves	Stud		GASKET, COVER HIT	In Stock	
Unit 3 H.P. Feedwater System	Boiler Feed	Motorized Discharge Valves	Stud		STUD, DEW 0280443	In Stock	
Unit 3 H.P. Feedwater System	Boiler Feed	Motorized Discharge Valves	Nut		STUD, DEW #0280513	In Stock	
Unit 3 H.P. Feedwater System	Boiler Feed	Motorized Discharge Valves	Disc		NUT, DEW 051095	In Stock	
Unit 3 H.P. Feedwater System	Boiler Feed	Motorized Discharge Valves	Nut		RING, DEW 051095	In Stock	
Unit 3 H.P. Feedwater System	Boiler Feed	Motorized Discharge Valves	Transmitter		RING, DEW 20040920	In Stock	
Unit 3 H.P. Feedwater System	Boiler Feed	Motorized Discharge Valves	Cage		STUD, DEW 0440024	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Packing		NUT, DEW #0033863	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Plug/Stem		DISC, DEW 2000006	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Gasket		NUT, KEYSTONE 903-735	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Gasket		TRANSMITTER, PRESS 5-800	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Ring		CAGE ASSY, FISH 22A3325X022	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Ring		PACKING, FISH 1R290601012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Gasket		PLUG/STEM, FISH 22A352X012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Ring		GASKET, FISH 10AA155X012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Ring		RING, FISH 10A4210X012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Ring		RING, FISH 12A35229X012	In Stock	
Unit 3 H.P. Feedwater System	Feed Water Flow Controls	LL Control Valve	Ring		RING, FISH 11A33016X012	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 15 of 22

Asset	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
				Notes	Inventory Description	
Unit 3 H.P. Feedwater System	Boiler Feed	Suction Line Safety Valve	1/2" Dia Body		VALVE RELIEF 1/2"110# SE BODY,VALVE MASON 37-79264	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Body		DA,VALVE MASON 01148734-99	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Ring		GASKET, MASON 356154-152-825	On Order
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Gasket		SEAL, MASON 354810-034-779	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Seal		REAINER, MASON 358754-000-163	On Order
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Retainer		SEAL,MASON 358753-000-210	On Order
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Seal		PIN,MASON 971342-023-250	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Pin		STEM,MASON 358738-113-210	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Stem		PLUG,MASON 011509398-206-0000	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Plug		SEAT,MASON 358748-000-596	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Seat		LINER,MASON 011509395-213-0000	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Liner		DIAPHRAGM,MASON 010275-040-77	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Diaphragm		STEM,MASON 770354-027-152	In Stock
Unit 3 H.P. Feedwater System	Boiler Feed	DA Recirculation Block Valve	Stem		BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	Feeder to MCC E1 - breaker C4	Shares spare re-build kit/critical spares kit with other CEE AK breakers.		
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	Feeder to MCC C12 - breaker C7	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	Feeder to Power Centre - breaker C14	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	Feeder to Power Centre - breaker C15	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	Feeder to Power Centre - breaker C15	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	breaker C3	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	breaker C5	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	breaker C6	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	breaker C8	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	breaker C9	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	breaker C10	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C-SAB12 (C1)	breaker C11	Shares spare re-build kit/critical spares kit with other CEE AK breakers.	BREAKER,EATON 600V	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 16 of 22

System	Asset	Critical Spare				Inventory Status
		Sub-System	Asset	Defined Spare	Notes	
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1) (Alternate Feed Tie Breaker to Transfer Bus C15)	breaker C12	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1) (Alternate Feed Tie Breaker to Transfer Bus C15)	breaker C13	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1)	Circuit Breaker to Bus - breaker C16	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1)	Circuit Breaker to Bus - breaker C17	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1)	Feeder to MCC - breaker C18	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1)	Circuit Breaker to Bus - breaker C19	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	SSB-3 Relay	Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1) (Alternate Feed Tie Breaker to Transfer Bus C15)	Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1) (Alternate Feed Tie Breaker to Transfer Bus C15)	Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB12 (SSB1)			Feeder to transformer ATC - breaker SSB-3		BREAKER,EATON 4160V 2000A	In Stock
Station Board SB12 (SSB1)			SSB-4 Relay		Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	In Stock
Station Board SB12 (SSB1)			SSB-4 Relay		Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	In Stock
Station Board SB12 (SSB1)			Feeder to Station Board - breaker SSB-2		BREAKER,EATON 4160V 2000A	In Stock
Station Board SB12 (SSB1)			Feeder to Station Board - breaker SSB-4		BREAKER,EATON 4160V 2000A	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	Feeder to Boiler Area MCC BAB3 - breaker SDB-34	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	GFB34	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	AC34	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	CWP34	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	LDP34	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 17 of 22

Asset	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
				Notes	Inventory Description	
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	WTP34	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	DB34	Feeder to Diesel Bus DB34 - Breaker	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	DB34	Feeder to Diesel Bus - D2	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	DB34	Feeder to Diesel Bus - DBT	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)			breaker ST34 relays	Shares spare re-build kit/critical spares kit with other FP breakers.	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)			breaker ST34 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)			breaker TB12 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)			breaker TB12 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)			breaker SAT34 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)			breaker SAT34 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)			TB3 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)	TB3 (Tie Breaker Between Station Board SB34 & Unit Board UB3)		TB3 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)	TB3 (Tie Breaker Between Station Board SB34 & Unit Board UB3)		TB3 relays	Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Station Board SB34 (ST34)			Feeder to Station Board - breaker ST34 & relays		BREAKER,EATON 4160V 2000A	In Stock
Station Board SB34 (ST34)			Feeder to Station Board - breaker TB12 & relays		BREAKER,EATON 4160V 2000A	In Stock
Station Board SB34 (ST34)			Circuit Breaker TB3		BREAKER,EATON 4160V 2000A	In Stock
Station Board SB34 (ST34)			breaker PSM3 & relay		BREAKER,EATON 4160V 1200A	In Stock
Station Board SB34 (ST34)			breaker TB12 relays	Shares spare with other Westinghouse relays - replaced by ABB SPAU121C	SYNCHROTACTION/SYN201	In Stock
Station Board SB34 (ST34)	TB3 (Tie Breaker Between Station Board SB34 & Unit Board UB3)		TB3 relays	Shares spare with other Westinghouse relays - replaced by ABB SPAU121C	RELAY,VOLTAGE ABB SPAU121C	In Stock
Station Board SB34 (ST34)	TB3 (Tie Breaker Between Station Board SB34 & Unit Board UB3)		TB3 relays	Shares spare with other Westinghouse relays - replaced by ABB SPAU121C	RELAY,VOLTAGE ABB SPAU121C	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 18 of 22

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 19 of 22

Asset		Critical Spare			Inventory Status
System	Sub-System	Asset	Defined Spare	Notes	
Unit Board UB1 (UB1-2)		UB1-11 relay	Shares spare with all other P&B Golds devices.	RELAY/RETRO. PBSJ3ESN11	In Stock
Unit Board UB1 (UB1-2)		UB1-2 relays	Shares spare with CGE I/F/A devices	RELAY/AUXILIARY RM/MA-2	In Stock
Unit Board UB1 (UB1-2)		UB1-2 relays	Shares spare with CGE I/F/A devices	RELAY/AUXILIARY RM/MS-1	In Stock
Unit Board UB1 (UB1-2)		UB1-2 relays	Shares spare with CGE I/F/A devices	RELAY/AUXILIARY RM/H-2	In Stock
Unit Board UB1 (UB1-2)		UB1-3 relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Unit Board UB1 (UB1-2)		UB1-3 relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C	In Stock
Unit Board UB1 (UB1-2)	UB1.3 (Aux Transformer ATA)	Power Center A UAB1(A1) (Alternate Feed Transfer Bus A9)	Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY/OVERCURRENT SEL 551C
Unit Board UB1 (UB1-2)		Feeder to Unit Board UB1 - breaker UB1-2	Feeder to transformer ATA - breaker UB1-3	BREAKER,EATON 4160V 2000A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-4	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-5	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-6	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-7	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-8	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-9	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-10	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)			Feeder to Unit Board UB1 - breaker UB1-11	BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB1 (UB1-2)		UB1-2 relays	Shares spare with other Westinghouse relays - replaced by ABB SPAU121C	RELAY,VOLTAGE ABB SPAU121C	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	Feeder to Power Centre B - breaker B1	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	Feeder to transformer LT-B - breaker B4	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	Feeder to MCC B1 - breaker B5	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	Feeder to Power Center B UAB2 (B1)	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	B2	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	B6	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	B7	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 20 of 22

Asset	System	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
					Notes	Inventory Description	
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	B8	Shares spare re-build kit/critical spares kit with other CGE AK breakers.	BREAKER,EATON 600V	In Stock	
Unit Board UB2 (UB2-1)		UB2-3 relay		Shares spare with all other P&B Golds devices.	RELAY,RETRO. PBSJ3E5N11	In Stock	
Unit Board UB2 (UB2-1)		UB2-4 relay		Shares spare with all other P&B Golds devices.	RELAY,RETRO. PBSJ3E5N11	In Stock	
Unit Board UB2 (UB2-1)		UB2-9 relay		Shares spare with all other P&B Golds devices.	RELAY,RETRO. PBSJ3E5N11	In Stock	
Unit Board UB2 (UB2-1)		UB2-10 relay		Shares spare with all other P&B Golds devices.	RELAY,RETRO. PBSJ3E5N11	In Stock	
Unit Board UB2 (UB2-1)		UB2-1 relays		Shares spare with CGE HFA devices	RELAY,AUXILIARY RXMA-2	In Stock	
Unit Board UB2 (UB2-1)		UB2-1 relays		Shares spare with CGE HFA devices	RELAY,AUXILIARY RXMA-1	In Stock	
Unit Board UB2 (UB2-1)		UB2-1 relays		Shares spare with CGE HFA devices	RELAY,AUXILIARY RXMS-1	In Stock	
Unit Board UB2 (UB2-1)		UB2-2 relays		Shares spare with CGE HFA devices	RELAY,AUXILIARY RXNH-2	In Stock	
Unit Board UB2 (UB2-1)		UB2-2 relays		Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock	
Unit Board UB2 (UB2-1)		UB2-2 relays		Shares spare with CGE IAC51 and ICAS3 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock	
Unit Board UB2 (UB2-1)				Shares spare with Feeder to Station Board - breaker SSB-1.	BREAKER,EATON 4160V 2000A	In Stock	
Unit Board UB2 (UB2-1)				Feeder to Unit Board - breaker UB2-1 & relays	BREAKER,EATON 4160V 2000A	In Stock	
Unit Board UB2 (UB2-1)				Feeder to Transformer ATB, breaker UB2-2	BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-3			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-4			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-5			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-6			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-7			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-8			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-9			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-10			BREAKER,EATON 4160V 1200A	In Stock	
Unit Board UB2 (UB2-1)		UB2-1 relays		Shares spare with other Westinghouse relays - replaced by ABB SPAU121C	RELAY,VOLTAGE ABB SPAU121C	In Stock	
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	Relays	Spares spare with CGE IAC51 and ICAS3 devices	RELAY,OVERCURRENT SEL 551C	In Stock	
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	Relays	Spares spare with CGE IAC51 and ICAS3 devices	RELAY,OVERCURRENT SEL 551C	In Stock	
Unit Board UB3 (UT3)	Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	Feeder to Aux Board - breaker UAB-3	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock	
Unit Board UB3 (UT3)	Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	Feeder to Transformer LDP-3 - breaker LDP-3	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock	
Unit Board UB3 (UT3)	Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	Feeder to MCC BAB3 - breaker BAB-3	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock	
Unit Board UB3 (UT3)	Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	AOP3	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock	
Unit Board UB3 (UT3)	Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	TAB3	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 21 of 22

Asset	Sub-System	Asset	Defined Spare	Critical Spare		Inventory Status
				Notes	Inventory Description	
Unit Board UB3 (UT3)	Unit Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	AC12	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock
Unit Board UB3 (UT3)	Unit Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	Tie Breaker to Station Board - breaker ATB3	Shares spare re-build kit/critical spares kit with other FP breakers.	BREAKER,SCHNEIDER 600V	In Stock
Unit Board UB3 (UT3)	Unit Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	Relays	Shares spare with all other F&B Goids devices.	RELAY,RETRO PBSJ3E5N11	In Stock
Unit Board UB3 (UT3)			UT3 relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock
Unit Board UB3 (UT3)			UT3 relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock
Unit Board UB3 (UT3)			UT3 Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock
Unit Board UB3 (UT3)			UT3 Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock
Unit Board UB3 (UT3)	Unit Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock
Unit Board UB3 (UT3)			Feeder to Unit Board - breaker UT3	Shares spare with Feeder to Station Board - breaker SSB-1.	BREAKER,EATON 4160V 2000A	In Stock
Unit Board UB3 (UT3)			Feeder to transformer UAT3 - breaker UAT3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			BFE3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			BFW3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			FDE3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			FDW3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			CEN3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			CES3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			CWE3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			CWN3		BREAKER,EATON 4160V 1200A	In Stock
Unit Board UB3 (UT3)			UT3 relays	Shares spare with other Westinghouse relays - replaced by ABB SPAU121C	RELAY,VOLTAGE ABB SPAU121C	In Stock
Unit Board UB3 (UT3)	Unit Aux Transformer (UAT3)	Aux Board UAB3 (UAB3)	Relays	Shares spare with other Westinghouse relays - replaced by ABB SPAU121C	RELAY,VOLTAGE ABB SPAU121C	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3		SSB-3 Relay	Replaced by SEL-551C	RELAY,OVERCURRENT SEL 551C	In Stock
Station Board SB12 (SSB1)			Power Center C SAB12 (C1) (Alternate Feed Tie Breaker to Transfer Bus C15)		RELAY,PROTECTION SEL701	In Stock
Station Board SB12 (SSB1)			Feeder to Station Board - breaker SSB-1 & Relays		BREAKER,EATON 4160V 2000A	In Stock
Station Board SB12 (SSB1)			SSB-1 Relay		SYNCHROTACT,SYN5201	In Stock
Station Board SB12 (SSB1)			SSB-1 Relay		RELAY,VOLTAGE ABB SPAU121C	In Stock
Station Board SB12 (SSB1)			SSB-1 Relay		Replaced by ABB RXMA/RXMH	In Stock
Station Board SB12 (SSB1)			SSB-1 Relay		Replaced by ABB RXMA/RXMH	In Stock

2020–2021 Winter Readiness Planning Report
Appendix E: Critical Spares Status Listing – Thermal Generation
Page 22 of 22

System	Sub-System	Asset	Critical Spare			Inventory Status
			Defined Spare	Notes	Inventory Description	
Station Board SB12 (SSB1)		SSB-1 Relay	Replaced by ABB RXMA/RXMH		RELAY,AUXILIARY RXMS-1	In Stock
Station Board SB12 (SSB1)		SSB-1 Relay	Replaced by ABB RXMA/RXMH		RELAY,AUXILIARY RXMH-2	In Stock
Station Board SB34 (ST34)		breaker PSM3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB1 (UB1-2)		UB1-5 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB1 (UB1-2)		UB1-6 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB1 (UB1-2)		UB1-7 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB1 (UB1-2)		UB1-8 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB1 (UB1-2)		UB1-10 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB2 (UB2-1)		UB2-5 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB2 (UB2-1)		UB2-6 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB2 (UB2-1)		UB2-7 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB2 (UB2-1)		UB2-8 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		BFE3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		BFW3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		FDE3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		FDW3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		CEN3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		CES3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		CWF3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		CWN3 relay	n/a		RELAY,PROTECTION SEL701	In Stock
Unit Board UB3 (UT3)		Relays	n/a		RELAY,PROTECTION SEL701	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1) (Alternate Feed Tie Breaker to Transfer Bus C15)	Feeder to Power Centre - breaker C1		BREAKER,EATON 600V	In Stock
Station Board SB12 (SSB1)	Aux Transformer ATC - SSB3	Power Center C SAB12 (C1)	Feeder to MCC C1 - breaker C2	Purchasing re-build kit/critical spares kit for AK-225 frame breaker	BREAKER,EATON 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)		Feeder to transformer SAT34 - breaker SAT34 & relays		BREAKER,EATON 4160V 1200A	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	Feeder to Station Board - breaker SAB34	Purchasing re-build kit/critical spares kit for 65H frame breaker	BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	Feeder to Station Board - breaker ATB12		BREAKER,SCHNEIDER 600V	In Stock
Station Board SB34 (ST34)	Station Aux Transformer (SAT34)	Station Aux Board (SAB34)	WAM34		BREAKER,SCHNEIDER 600V	In Stock
Unit Board UB1 (UB1-2)	UB13 (Aux Transformer ATA)	Power Center A UAB1 (A1) (Alternate Feed Transfer Bus A9)	Relays	Shares spare with all other P&B Goids devices.	RELAY,OVERCURRENT SEL551C	In Stock
Unit Board UB1 (UB1-2)	UB13 (Aux Transformer ATA)	Power Center A UAB1 (A1) (Alternate Feed Transfer Bus A9)	Relays	Shares spare with CGE IAC51 and ICA53 devices - replaced by SEL-551C	RELAY,OVERCURRENT SEL551C	In Stock
Unit Board UB2 (UB2-1)	Aux Transformer ATB (UB22)	Power Center B UAB2 (B1)	Relays	Shares spare with all other P&B Goids devices.	RELAY,RETRO. PBS33ESM11	In Stock

¹ These four items are used on Both Stage 1 & Stage 2 Units (Unit #1, #2 & #3). For reporting purposes it is counted as "1" item.

² These two items are used on Both Stage 1 & Stage 2 Units (Unit #1, #2 & #3). For reporting purposes it is counted as "1" item.



Appendix F

Critical Spares Status Listing – Gas Turbine Generation

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
HIGH ENERGY IGNITION UNIT, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	High	N/A	
BEARING (494047), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
BEARING (494056), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
VIBRATION TRANSDUCER, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
JACKING OIL PUMP, MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
FUEL FILTER, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
OIL FILTER UNIT - COMPLETE (B-108506), GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
FILTER (494064), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
PROXIMITY SWITCH, CLUTCH, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
ALTAIR QUICK SHUTOFF VALVE (AV-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
FUEL VALVE (FC-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
FUEL RECIRCULATION SOLENOID VALVE (LF-7), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
FUEL REGULATOR (LF-4), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
JACKING OIL PERMISSIVE PRESSURE SWITCH, MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
VALVE (181536), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Low	N/A	
PRIMARY RATCHET RING, CLUTCH, PRIME MOVER SYSTEMS; A SIDE	In Stock	High	N/A	
PRIMARY RATCHET RING, CLUTCH, PRIME MOVER SYSTEMS; B SIDE	In Stock	High	N/A	
SECONDARY RATCHET RING, CLUTCH, PRIME MOVER SYSTEMS; A SIDE	In Stock	High	N/A	
SECONDARY RATCHET RING, CLUTCH, PRIME MOVER SYSTEMS; B SIDE	In Stock	High	N/A	
RING THAT THE PRIMARY PAWL AND SPRING ARE INSTALLED	In Stock	Medium	N/A	
PRIMARY PAWL SPRING, CLUTCH, PRIME MOVER SYSTEMS	In Stock	High	N/A	
PRIMARY PAWL, CLUTCH, PRIME MOVER SYSTEMS	In Stock	High	N/A	
SECONDARY PAWL, CLUTCH, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
LIMIT SWITCH, SNOW DOOR ASSEMBLY, EXHAUST, PRIME MOVER SYSTEMS, SVL GT	In Stock	Medium	N/A	
THERMOCOUPLE (181398N1), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
SPEED PICKUP (181487), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	High	N/A	
THERMOCOUPLE (181397), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
THERMOCOUPLE (181398N2), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
PROBE (181414N1), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
PROBE (181414N2), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
THERMOCOUPLE (184847), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	High	N/A	
MOTOR OPERATED TANK SHUTOFF VALVE (LF-38), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS, HWD GT	In Stock	High	N/A	
FINAL FUEL FILTER (F-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
HEATER FILTER COALESCER, LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
PREFILTER, LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
HIGH EFFICIENCY FARR HP-100 FILTER (2'X2'X2"), FILTER BOX - CURTISS WRIGHT, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
FILTER (F-GGLO-1), GAS GENERATOR LUBE OIL SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
UNLOADING FILTER, LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
DUPLEX 25U FILTER (F-LO-1), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
FILTER/COALESCER HEATER (HTR-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS, HWD GT	In Stock	Low	N/A	
P3 PRESSURE TRANSDUCER (PT-P3-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
FUEL SUPPLY THERMOCOUPLE (TC-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
ALTERNATOR COOLING AIR TEMPERATURE THERMOCOUPLE (TC-A-1), ALTERNATOR COOLING SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
COMMON DRAIN CLUTCH B THERMOCOUPLE (TC-LO-11), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
COMPRESSOR START-STOP PRESSURE SWITCH (PS-CA-1), GAS GENERATOR AIR STARTER SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
COMPRESSOR START-STOP PRESSURE SWITCH (PS-CA-2), GAS GENERATOR AIR STARTER SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
ANTI-ICING HOT AIR VALVE - COMPLETE (810-501-0747), GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Low	N/A	
GAS GENERATOR PERMISSIVE START PRESSURE SWITCH, GAS GENERATOR AIR STARTER SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
STARTER OVERPRESSURE PRESSURE SWITCH (PS-CA-3), GAS GENERATOR AIR STARTER SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
PRESSURE REGULATING VALVE (LO-8), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
INLET TEMPERATURE THERMOCOUPLE, GAS GENERATOR ENCLOSURE WITH SEPTUM DOORS, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
RESISTANCE TEMPERATURE DETECTOR PROBE, GAS GENERATOR ENCLOSURE WITH SEPTUM DOORS, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
NC SOLENOID VALVE (SV-CA3), GAS GENERATOR AIR STARTER SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
COMBUSTION CHAMBER, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
LOWER FUEL PUMP ASSEMBLY, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
OUTER FUEL PUMP DRIVE ASSEMBLY (BDA-7591), GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
UPPER FUEL PUMP ASSEMBLY, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
EXCITER BEARING, 63MVVA 50MW GENERATOR, POWER GENERATION SYSTEMS	In Stock	High	N/A	
ROTOR BEARING, 63MVVA 50MW GENERATOR, POWER GENERATION SYSTEMS	In Stock	High	N/A	
PRESSURE SWITCH, MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
OIL TO CLUTCH A PRESSURE TRANSDUCER (PT-LO-1), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	High	N/A	
FUEL PRESSURE TRANSDUCER (PT-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
OIL PUMP - COMPLETE, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
OUTER OIL PUMP DRIVE ASSEMBLY (47-1-1-006409), GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
OUTER STARTER DRIVE ASSEMBLY (BDA-1153), GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
SCAVENGE PUMP ASSEMBLY (47-1-1-006418), GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
HP COMPRESSOR MAGNETIC PICKUP, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Low	N/A	
LP COMPRESSOR MAGNETIC PICKUP, GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Low	N/A	
LOW LIQUID LEVEL ALARM SWITCH (LL-GI-1), MLO/GLYCOL COOLING SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
HEATER CONTROL TEMPERATURE SWITCH (TS-GGLO-1), GAS GENERATOR LUBE OIL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
HEATER CONTROL TEMPERATURE SWITCH (TS-LO-1), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
FINAL FUEL FILTER DIFFERENTIAL PRESSURE SWITCH (PSD-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS	In Stock	Medium	N/A	
INLET PRESSURE TRANSDUCER, GAS GENERATOR ENCLOSURE WITH SEPTUM DOORS, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
CLUTCH CONTROL SOLENOID VALVE (LO-6), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, SVL GT	In Stock	Medium	N/A	
PROXIMITY SWITCH, SNOW DOOR ASSEMBLY, EXHAUST, PRIME MOVER SYSTEMS, HWD GT	In Stock	Low	N/A	
VIBRATION PICKUP (181571), POWER TURBINE MODEL CT2, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
LIQUID FUEL BURNER - COMPLETE (BDC-3026), GAS GENERATOR, PRIME MOVER SYSTEMS	In Stock	Medium	N/A	
NC SOLENOID VALVE (SV-CA2), GAS GENERATOR AIR STARTER SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
NO SOLENOID VALVE (SV-CA-1), GAS GENERATOR AIR STARTER SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
PRESSURE SWITCH, MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS	In Stock	High	N/A	
PRESSURE SWITCH, LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS, HWD GT	In Stock	Medium	N/A	
PRESSURE SWITCH, GAS GENERATOR LUBE OIL SYSTEM, AUXILIARY SYSTEM, HWD GT	In Stock	Medium	Mid-November	
3-WAY THERMOSTATIC VALVE (GL-2), MLO/GLYCOL COOLING SYSTEM, AUXILIARY SYSTEMS	On Order	Low	Late November	
ALTERNATOR BEARING DRAIN OIL THERMOCOUPLE (TC-LO-3), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, HWD GT	On Order	Low	Late November	
OIL DRAIN ALTERNATOR BEARING THERMOCOUPLE, MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, SVL GT	On Order	Low	Late November	
OIL DRAIN CLUTCH BEARING THERMOCOUPLE, MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, SVL GT	On Order	Low	Late November	
OIL DRAIN THERMOCOUPLE (TC-LO-2), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS, HWD GT	On Order	Low	Late November	
OIL SUPPLY THERMOCOUPLE (TC-LO-1), MAIN LUBE OIL SYSTEM, AUXILIARY SYSTEMS	Engineering Required	Low	TBD	
FUEL TEMPERATURE SENSOR (TS-LF-1), LIQUID FUEL SYSTEM, AUXILIARY SYSTEMS				

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
TURBINE EXHAUST TUNNEL - THERMAL DETECTOR, KIDDE-FENWAL:12-H27121-020-08	Provided Under Service Contract	Medium	N/A	
FIRE CONTROL PANEL TROUBLE ALARM TO DCS, DET-TRONICS:U9500A	Provided Under Service Contract	Low	N/A	
FIRE CONTROL PANEL DISCHARGE - ALARM TO DCS, NOTIFIER:AFP-300	Provided Under Service Contract	Low	N/A	
LP COMPRESSOR BLEED VALVE, 18" METSO AUTOMATION: 815W 11 22HB XZC VVA	In Stock	High	N/A	
HP COMPRESSOR BLEED VALVE, 14", FISHER: A31A-1031/33082 SR80	On Hand - Under Parts Management Agreement	High	N/A	
MODULE, CONTROLNET - COMBINATION GENERATOR CONTROL MODULE WITH CONTROLNET COMMUNICATION	On Hand - Under Parts Management Agreement	Medium	N/A	
IFM, ANALOG, 16 CHANNEL - FUSIBLE 16 CHANNEL ANALOG IFM, 24V BLOWN FUSE INDICATORS, 5 TERMINALS PER INPUT, ANALOG INTERFACE MODULE	On Hand - Under Parts Management Agreement	Medium	N/A	
IFM, ANALOG, 8 CHANNEL - FEED-THROUGH 8 CHANNEL ANALOG IFM, 3 TERMINALS PER INPUT, ANALOG INTERFACE MODULE	On Hand - Under Parts Management Agreement	Medium	N/A	
IFM, DIGITAL, 40 POINT - 40-POINT ISOLATED FUSIBLE DIGITAL IFM, 5 X 20MM FUSE CLIPS, 24 V AC/DC BLOWN FUSE INDICATORS, 4 TERMINALS PER INPUT, DIGITAL INTERFACE MODULE	On Hand - Under Parts Management Agreement	Medium	N/A	
MODULE, RELAY EXPANDER - RELAY EXPANDER MODULE, 24 VDC, 16 RELAYS WITH FUSING	On Hand - Under Parts Management Agreement	Medium	N/A	
10 SLOT CONTROLLOGIX CHASSIS	On Hand - Under Parts Management Agreement	Medium	N/A	
4 SLOT CONTROLLOGIX CHASSIS	On Hand - Under Parts Management Agreement	Medium	N/A	
CONTROLNET INTERFACE MODULE (100 CONNECTIONS)	On Hand - Under Parts Management Agreement	Medium	N/A	
CONTROLNET REDUNDANT INTERFACE MODULE (100 CONNECTIONS)	On Hand - Under Parts Management Agreement	Medium	N/A	
CONTROLNET REDUNDANT BRIDGE MODULE (40-48 CONNECTIONS)	On Hand - Under Parts Management Agreement	Medium	N/A	
ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS)	On Hand - Under Parts Management Agreement	Medium	N/A	
ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 64 TCP/IP CONNECTIONS)	On Hand - Under Parts Management Agreement	Medium	N/A	
10-30 VDC ISOLATED INPUT 16 PTS (36 PIN)	On Hand - Under Parts Management Agreement	Medium	N/A	
10-30 VDC INDIVIDUALLY ISOLATED INPUT 16 PTS (36 PIN)	On Hand - Under Parts Management Agreement	Medium	N/A	
ANALOG INPUT - CURRENT/VOLTAGE 16 PTS (36 PIN)	On Hand - Under Parts Management Agreement	Medium	N/A	
CONTROLLER, CONTROLLOGIX 5570, 2MB CONTROLLOGIX 5570 CONTROLLER WITH 2 MB MEMORY, USB PORT, 4 CHARACTER ALPHA/NUMERIC DISPLAY.	On Hand - Under Parts Management Agreement	High	N/A	
CONTROLLER, CONTROLLOGIX 5570, 4MB CONTROLLOGIX 5570 CONTROLLER WITH 4 MB MEMORY, USB PORT, 4 CHARACTER ALPHA/NUMERIC DISPLAY.	On Hand - Under Parts Management Agreement	High	N/A	
10-31 VDC OUTPUT 32 PTS (36 PIN)	On Hand - Under Parts Management Agreement	Medium	N/A	
10-31 VDC OUTPUT 32 PTS (36 PIN)	On Hand - Under Parts Management Agreement	Medium	N/A	
ANALOG OUTPUT - CURRENT/VOLTAGE 8 PTS (20 PIN)	On Hand - Under Parts Management Agreement	Medium	N/A	
CONTROLLOGIX, 85-265 VAC POWER SUPPLY (10 AMP @ 5V)	On Hand - Under Parts Management Agreement	Medium	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
CONTROLLOGIX, 85-265 VAC POWER SUPPLY (13 AMP @ 5V)	On Hand - Under Parts Management Agreement	Medium	N/A	
REDUNDANCY MODULE	On Hand - Under Parts Management Agreement	Medium	N/A	
CONTROLLOGIX POSITION AND TIME SERVICES	On Hand - Under Parts Management Agreement	Medium	N/A	
STRATIX 5700 SWITCH, MANAGED, 16 FAST ETHERNET COPPER PORTS, 2 FAST ETHERNET COMBO PORTS, 2 FAST ETHERNET FIBER SFP SLOTS, LITE SOFTWARE, DLR	On Hand - Under Parts Management Agreement	Low	N/A	
NETWORKS AND COMMUNICATION PRODUCTS, CONTROLNET REPEATER ADAPTER MODULE	On Hand - Under Parts Management Agreement	Low	N/A	
NETWORKS AND COMMUNICATION PRODUCTS, LONG-DISTANCE FIBER RING REPEATER MODULE	On Hand - Under Parts Management Agreement	Low	N/A	
NETWORKS AND COMMUNICATION PRODUCTS, LONG-DISTANCE FIBER RING REPEATER MODULE	On Hand - Under Parts Management Agreement	Low	N/A	
NETWORKS AND COMMUNICATION PRODUCTS, RIGHT-ANGLE T-TAP	On Hand - Under Parts Management Agreement	Low	N/A	
NETWORKS AND COMMUNICATION PRODUCTS, RIGHT-ANGLE Y-TAP	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, CONTROLNET FLEX I/O ADAPTER MODULE	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, INPUT MODULE, 24 VDC, 16 SINK INPUTS	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, INPUT MODULE, 24 VDC, 32 SINK INPUTS	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, ANALOG INPUT MODULES, 8 SINGLE-ENDED INPUTS	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, ANALOG INPUT MODULES, 8 SINGLE-ENDED INPUTS	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, ANALOG INPUT MODULE, 16 BIT, 4 POINT ISOLATED	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, INPUT MODULE, 2-CHANNEL HIGH RESOLUTION FREQUENCY	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, INPUT MODULE, 8 POINT RTD	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, INPUT MODULE, NON-ISOLATED, THERMOCOUPLE / RTD / MV	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, INPUT MODULE, THERMOCOUPLE, 8 POINT	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, OUTPUT MODULE, 24 VDC, 16 SOURCE OUTPUTS	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, OUTPUT MODULE, 24 VDC, 32 SOURCE (2 GROUPS OF 16) OUTPUTS, PROTECTED	On Hand - Under Parts Management Agreement	Low	N/A	
1794 FLEX, FLEX EX, FLEX XT I/O SYSTEM, ANALOG OUTPUT MODULE, 16 BIT, 4 POINT ISOLATED	On Hand - Under Parts Management Agreement	Low	N/A	
PF750-24VI/O MODULE-2AI,2AO,6DI,2RO	On Hand - Under Parts Management Agreement	Medium	N/A	
POWERFLEX ARCHITECTURE CLASS DEVICENET COMMUNICATION ADAPTER	On Hand - Under Parts Management Agreement	Medium	N/A	
POWERFLEX 753 AC DRIVE, WITH EMBEDDED I/O, AIR COOLED, AC INPUT WITH DC TERMINALS, OPEN TYPE, 14 AMPS, 10HP ND, 7.5HP HD, 480 VAC, 3 PH, FRAME 2, FILTERED, CM JUMPER REMOVED, DB TRANSISTOR, BLANK (NO	On Hand - Under Parts Management Agreement	Medium	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
POWERFLEX ARCHITECTURE CLASS REMOTE ENHANCED HIM, IP66 (NEMA 4X/12) INDOOR USE ONLY. INCLUDES 1202-C30 CABLE.	On Hand - Under Parts Management Agreement	Medium	N/A	
PANELVIEW PLUS DISPLAY KEYPAD/TOUCH, 15-INCH TFT DISPLAY, COLOR, NO OPTIONS	On Hand - Under Parts Management Agreement	Medium	N/A	
PANELVIEW PLUS DISPLAY TOUCH SCREEN, 12.1-INCH TFT DISPLAY, NONE, HIGH BRIGHT	On Hand - Under Parts Management Agreement	Medium	N/A	
CONTROLNET SCHEDULED AND UNSCHEDULED COMMUNICATION MODULE FOR MARINE CERTIFIED PANELVIEW PLUS 700-1500 AND PANELVIEW PLUS CE	On Hand - Under Parts Management Agreement	Low	N/A	
PANELVIEW PLUS 6 LOGIC MODULE, WINDOWS CE 6.0, 80 MB NON VOLATILE STORAGE FOR APPLICATIONS, DC POWER INPUT, NO OPTIONS	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 1.0-5.0A, NEMA 2	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 3-15A, NEMA 2	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 5-25A, NEMA 2	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 9-45A, NEMA 2	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 9-45A, NEMA 3	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 18-90A, NEMA 3	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 0.4-2.0A, NEMA 00	On Hand - Under Parts Management Agreement	Medium	N/A	
592 E3 AND E3 PLUS SOLID-STATE OVERLOAD RELAYS, E3 PLUS, 60-302A, NEMA 5	On Hand - Under Parts Management Agreement	Medium	N/A	
PROSOFT TECHNOLOGY DNP 3.0 ETHERNET SERVER COMMUNICATION MODULE	On Hand - Under Parts Management Agreement	Low	N/A	
PROSOFT TECHNOLOGY MODBUS MASTER/SLAVE ENHANCED COMMUNICATION MODULE	On Hand - Under Parts Management Agreement	Low	N/A	
PURGE SOLENOID REPAIR KIT, SURESITE: 3153515	In Stock	Low	N/A	
BARKESDALE HEATER CONTROL TEMPERATURE SWITCH, MODEL# T1X-S154-A, STAINLESS STEEL WAS MARKED IN STOCK JDE=0	In Stock	Low	N/A	
VALVE, SHUTDOWN PURGE, 1", QS0065-4 DXP-L21GNEB JBHC8327G041-125VDC	In Stock	High	N/A	
VALVE, CONTINUOUS PURGE 3", QS0600-4 DXP-L21GNEB EFHC8321G1	In Stock	High	N/A	
FUSE, LOW VOLTAGE DC REPLACEMENT FUSE (LOW VOLTAGE DC PIM), BENTLY NEVADA: 1720045	In Stock	Low	N/A	
MODULE, DC POWER SUPPLY HIGH VOLTAGE DC POWER SUPPLY MODULE, BENTLY NEVADA: 129486-01	In Stock	Medium	N/A	
MODULE, POWER SUPPLY LOW VOLTAGE DC POWER SUPPLY MODULE, BENTLY NEVADA: 133292-01	In Stock	Medium	N/A	
MODULE, POWER INPUT LOW VOLTAGE DC POWER INPUT MODULE (PIM), BENTLY NEVADA: 133300-01	In Stock	Medium	N/A	
MANUAL, POWER SUPPLY MODULE POWER SUPPLY MODULE, MANUAL, BENTLY NEVADA: 129767-01	In Stock	Medium	N/A	
E-CELL 55A CURRENT TRANSDUCER, PHOENIX CONTACT: 3062518	In Stock	Low	N/A	
E-CELL 32A CONTACTOR, GENERAL ELECTRIC: 3060877	In Stock	Low	N/A	
PANEL HEATER 120V 60HZ 400W, PH40011	In Stock	Low	N/A	
SOLAR SPARK PLUG IGNITER, CENTAUR: 903316C1	In Stock	Low	N/A	
SHAFT, FISHER SHAFT, FISHER: 7000400800	In Stock	Low	N/A	
PUMP, CONVERTER CHARGING TORQUE CONVERTER CHARGING PUMP, KOENIG:X216228-J	In Stock	Medium	N/A	
REPAIR KIT, SSS CLUTCH MINOR KOENIG:SL17998MNKT	In Stock	Medium	N/A	
VALVE, CHECK 3" 3MB60-6047-WR	In Stock	Low	N/A	
VALVE, SS POPPET CHECK VALVE, SWAGELOCK:SS-6C-1	In Stock	Low	N/A	
VALVE, FUEL CHECK FUEL LINE CHECK VALVE, PARKER:10A-CBGG8L-10-PF-SS, VOGT:SW9871T,	In Stock	High	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
VALVE, CHECK VALVE, SUN HYDRAULICS:CXDA-XAN	In Stock	Low	N/A	
VALVE, SOLENOID SOLENOID VALVE, SUN HYDRAULICS:DLLA-MCN	In Stock	Low	N/A	
VALVE, FUEL BYPASS MANUFACTURER:FISHER, MODEL:1008 HANDWHEEL ACTUATOR W/LOCKING MECHANISM, SIZE 40, TRAVEL LENGTH:3/4", CAPABLE OF GIVING PRECISE MANUAL - THROTTLING CONTROL, TRAVEL INDICATOR MOUNTED ON ACTUATOR - YOKE FOR VISUAL VALVE PLUG POSITION	In Stock	High	N/A	
REPAIR KIT, BYPASS VALVE REPAIR KIT FOR FUEL START-UP BYPASS VALVE, MANUFACTURER:FISHER, MODEL:EZ, SIZE:1", TRIM:1/4" M-FORM, USED FOR THROTTLING ON-OFF CONTROL OF LIQUID OR GASES, SINGLE PORT, GLOBE-STYLE BODY FOR - QUICK CHANGE TRIM & POST GUIDED UNBALANCED VALVE PLUG	In Stock	High	N/A	
VALVE, PUMP DISCHARGE PUMP DISCHARGE PRESSURE REGULATING VALVE, MOOG/FISHER:ET-657-DVC-6200, SERIAL # F000642304, TYPE:ET CAV 111, SIZE 1-1/2, PORT SIZE:1-5/16, RATING:CL600/1500 PSI CWP, PLUG:SSST, STEM:SSST, BODY:STL, SEAT:SSST	In Stock	Low	N/A	
VALVE, PRESSURE RELIEF HYDRAULIC FLUID PRESS RELIEF VALVE, REXROTH:R900341066	In Stock	Low	N/A	
PUMP DISCHARGE - PRESSURE RELIEF VALVE, REXROTH:R900420276	In Stock	Low	N/A	
VALVE MANIFOLD PRESSURE RELIEF VALVE, REXROTH:R900423723	In Stock	Low	N/A	
MAIN PUMP DISCHARGE - PRESSURE RELIEF VALVE, REXROTH:R900424147	In Stock	Low	N/A	
PRESSURE CONTROL VALVE, SUN HYDRAULICS:RDBA-LAN	In Stock	Low	N/A	
SOLENOID VALVE, TYCO: 52-287-10-024	In Stock	Low	N/A	
AIR CONTROL SOLENOID VALVE, 24VDC MINI, INGERSOIL RAND 633658	In Stock	Low	N/A	
VALVE, STOP FISHER 3", 560iit-TH66 QS1600-4 DXP-L21GNEB	In Stock	Low	N/A	
FILTER, WATER - CLARK RELIANCE 2500PV	In Stock	Medium	N/A	
INST AIR DEW POINT ANALYZER, MICHELL INSTRUMENTS:EA-XP-TX-EX1-C1-D1-E2-F1-G1-H1	In Stock	Low	N/A	
ACTUATOR, TYPE PNEUMATIC RACK & PINION, FLOW/SERVE:20E395WZ24D	In Stock	Low	N/A	
ATOMIZING AIR RECEIVER INLET VALVE, WORCESTER:5166TT150	In Stock	Low	N/A	
MODEL AD-1 AUTOMATIC DRAIN VALVE, TYCO:52-793-2-004	In Stock	Low	N/A	
MODEL ASV-1 AUTOMATIC - SHUT-OFF VALVE, TYCO:92-343-1-021	In Stock	Low	N/A	
COMBUSTOR SHELL DISCHARGE - TEMPERATURE THERMOCOUPLE DUPLEX TYPE K	In Stock	Medium	N/A	
COOLING AIR FILTER BLEED DRAIN VALVE, 1", WORCHESTER:B4446 XG SW	In Stock	Low	N/A	
COIL, OVERSPEED TRIP ELECTRONIC OVERSPEED TRIP, 9501W38	In Stock	High	N/A	
TORQUE CONVERTER MAGNETIC SPEED PICK-UP COIL, KOENIG:9501W14	In Stock	High	N/A	
1 SERIES NEEDLE VALVE, SWAGELOCK:B-1VM4-S4/SS-1VM4-S4	In Stock	Low	N/A	
FEMALE NEEDLE VALVE, MCMASTER CARR:4644K33, 3/8"NPT	In Stock	Low	N/A	
PARKER VALVE, MODEL# 6Z-PR4-BNT-SS	In Stock	Low	N/A	
GLOBE VALVE, STEEL, VOGT:SV9871T, LUBE OIL FILTER TOWER #1 VENT VALVE	In Stock	Low	N/A	
INDICATOR, SIGHT 1-1/2", JACOBY:100-S(NF)	In Stock	Low	N/A	
PILOT VALVE ASSEMBLY, CLIPPARD FV-SP W/MPA-3P, CLIPPARD:LWT3732	In Stock	High	N/A	
FLOAT, SURESITE:88111	In Stock	Low	N/A	
HYD FLUID SUPPLY FILTER SELECTION VALVE, PALL:1319232	In Stock	Low	N/A	
THROTTLE VALVE, NFBC-LCN	In Stock	Low	N/A	
GASKET, FILTER HOUSING GASKET,CLARK RELIANCE:A10137455, NFS# 10117455	In Stock	Low	N/A	
O-RING, BUNA HEAD TO BOWL O-RING BUNA, PALL:UK19672	In Stock	Low	N/A	
O-RING, FISHER O-RING, FISHER:T1205106562	In Stock	Low	N/A	
BUSHING ASSY, FISHER POT POT/BUSHING ASSEMBLY, FISHER:27B6208X012	In Stock	Low	N/A	
FILL KIT, SFG ABB BREAKER SF6 FILL KIT, (HECS 80S), S/N 1HC211015861	In Stock	Medium	N/A	
BELT, ECODEYNE:1320-BLT-S-EHIX19-90	In Stock	Medium	N/A	
COUPLING, PUMP/MOTOR JOHN CRANE:A045-3S78-1270, 1-1/2" - 2-3/8", ROUGH BORE	In Stock	Low	N/A	
PUMP, GEAR DANFOSS:BERENDEN FLUID POWER SNP 2/11	In Stock	Medium	N/A	
COUPLING, PUMP-MOTOR COUPLING, REXNORD-OMEGA: REX ELASTOMER-ES-4(STANDARD ORANGE),PUMP-MOTOR	In Stock	Low	N/A	
COUPLING, PUMP-MOTOR COUPLING, REXNORD-OMEGA: ELASTOMER-ES-5 (STANDARD ORANGE) PUMP-MOTOR	In Stock	Low	N/A	
REPAIR KIT, INJ. PUMP CHEMICAL INJECTION PUMP REPAIR KIT , GRAINGER:K4PTC1	In Stock	Medium	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
FILTER, FUEL CAT 1R0749 FOR USE ON STAGE I AND II, EMERGENCY DIESEL MANUAL PRIMING PUMPS, CATERPILLAR #1R-0749	In Stock	Medium	N/A	
ELEMENT 0180MA0003BN (3µm), P/N 2059438, SPIN ON ELEMENT, MANUFACTURER:HYDAC	In Stock	Low	N/A	
FILTER, LIQUID FUEL CLARK RELIANCE 2200A3	In Stock	High	N/A	
FILTER, AIR (ELEMENT) INGERSOLL RAND 32012957	In Stock	Low	N/A	
ELEMENT, PRE-FILTER PRE-FILTER ELEMENT 105 SCFM, INGERSOLL RAND 855565679	In Stock	Low	N/A	
FILTER, AIR GEN AIR FILTERS, COMPACT FILTER G4/F7 287 X 292 X 300, SIEMENS	In Stock	Medium	N/A	
FILTER KIT, FUEL LOW PRESSURE FUEL FILTER REPLACEMENT KIT, CENTAUR:912555C3	In Stock	Medium	N/A	
KIT, OIL FILTER & O-RING LUBE OIL FILTER & O-RING KIT, CENTAUR:9161283C1	In Stock	High	N/A	
FILTER, FUEL BOOST KIT - LOW PRESSURE, 912343C1	In Stock	Low	N/A	
FILTER, IGV ACTUATOR - MOOG:B64567-1V	In Stock	Medium	N/A	
FILTER, TMP-95 FINAL PNEUMAFIL:S52538B1, V-CELL STMPM16 STATIC BARRIER FILTER, 24"X24"X12", INJECTION MOLDED PLASTIC FRAME, 100% SYNTHETIC MEDIA, NEOPRENE SPONGE RUBBER GASKET - DOWN STEAM SIDE	In Stock	Medium	N/A	
PRE-FILTER, Z-100 PNEUMAFIL:S52709C1, PRE-FILTER PANEL, 24"X24"X4"73 (FT2) SYNTHETIC MEDIA, PLASTIC FRAME FOR HIGHER PERFORMANCE AND LOWER PRESSURE DROP	In Stock	Medium	N/A	
PRE-FILTER, PARKER AIR DRYER PRE-FILTER, PARKER FILTER CARTRIDGE# 6C10-050	In Stock	Low	N/A	
AFTER-FILTER, AIR DRYER AIR DRYER AFTER FILTER, PN 25-178-50C, PARKER FILTER CARTRIDGE # 10C10-050	In Stock	Low	N/A	
FILTER, PRESSURE PALE: ELEMENT HC9600FCP4H	In Stock	Medium	N/A	
ELEMENT, POST FILTER POST FILTER ELEMENT 105 SCFM, INGERSOLL RAND 855565661	In Stock	Medium	N/A	
TRANSMITTER, PRESSURE ROSEMOUNT:3051S2TG3A2A11A1AM5Q4	In Stock	Medium	N/A	
FILTER, LUBE OIL FILTER, CLARKE RELIANCE:A2200AA4, NFS:2200AA4	In Stock	High	N/A	
SOFT PARTS KIT, CLARKE RELIANCE:A10400107, NFS:10400107	In Stock	Medium	N/A	
FILTER AUTOMATIC FLOW CONTROL, 4"FNPT, MODEL:ST-400-25, 240GPM, PENTAIR:LWT 3949	In Stock	Medium	TBD	
FILTER AUTOMATIC BACKWASH FLOW CONTROL, 4" FNPT, MODEL:ST-400-25, 245GPM, MODULAR PIPING SUPPLY INC: LWT5430	In Stock	Medium	N/A	
CARTRIDGE, DESICCANT PNEUMATIC PRODUCTS:3153517	In Stock	Low	N/A	
FILTER, OIL 275-2604 OIL FILTER, CAT:275-2604	In Stock	Low	N/A	
FILTER, AIR 4P0710S AIR FILTER, CAT: 4P0710	In Stock	Low	N/A	
PRE-FILTER, AIR COOLING	In Stock	Low	N/A	
PRE-FILTER, AIR COOLING	In Stock	Low	N/A	
METER, FLOW ROSEMOUNT:3051SFC1CS030N065-T33EA1A5Q4E6M5	In Stock	Medium	TBD	
LIQUID FUEL TEMPERATURE TRANSMITTER, ROSEMOUNT 644HAK6M5Q4J6	In Stock	Medium	N/A	
PUMP SUPPLY PRESSURE SWITCH, CCS 646GZEM1	In Stock	Medium	N/A	
PUMP DISCHARGE PRESSURE TRANSMITTER, ROSEMOUNT 3051CG5A22A1A55B4CGM5Q4	In Stock	Medium	N/A	
PNEUMATICALLY ACTUATED THROTTLE VALVE, FISHER ET-677-DVC-6200	In Stock	Medium	N/A	
PUMP DISCHARGE PRESSURE SWITCH, CCS 646GZEM5	In Stock	Medium	N/A	
METER, FLOW ROSEMOUNT:3051SFC1CS030NXT33DA1A5DQ4E6M5	In Stock	Medium	TBD	
CONTROLLER, STEP LIFO 8 STAGES, SCL4000-8	In Stock	Low	N/A	
LIMIT CONTROLLER (0-2502-F), SA100LKA3-MN-4*NN-D1/Y	In Stock	Low	N/A	
STEP CONTROLLER LIFO (4 STAGES), SCL4000-4	In Stock	Low	N/A	
INSTRUMENT AIR DRYER DIFFERENTIAL PRESSURE, DIFFERENTIAL PRESSURE TRANSMITTER, ROSEMOUNT:3051S2CD3A2A1A1AL1L214M5Q4	In Stock	Low	N/A	
DIFFERENTIAL PRESSURE SWITCH,JOHNSON CONTROLS:ICI P 233 A-10-AAC	In Stock	Low	N/A	
FUEL OIL INLINE HEATER SUPPLY FLOW SWITCH, MAGNETROL TD2-7D01-0G0 C/W TEA-A110-004, THERMAL DISPERSION FLOW SWITCH	In Stock	Low	N/A	
FUEL UNLOADING PUMPS OUTLET PRESSURE/GAUGE PRESSURE TRANSMITTER, ROSEMOUNT:3051S2TG3A2E11A1AB4K6M5Q4	In Stock	Low	N/A	
FUEL OIL TANK 1 LEVEL RADAR LEVEL TRANSMITTER, ROSEMOUNT:5402AH1E64SPV/DAM1C1S3	In Stock	Medium	N/A	
FUEL OIL TANK HIGH LEVEL SWITCH, ULTRASONIC GAP LEVEL SWITCH, MAGNETROL:961-2DAO-030 C/W 9A1-A43A-018	In Stock	Medium	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
FUEL OIL INLINE HEATER DISCHARGE TEMPERATURE TRANSMITTER, ROSEmount:644HAK6J6M4	In Stock	Medium	N/A	
FUEL OIL INLINE HEATER DISCHARGE TEMPERATURE RTD, ROSEmount:68 SERIES/0068D21C30A020T26	In Stock	Medium	N/A	
FUEL OIL DAY TANK LEVEL RADAR LEVEL TRANSMITTER, ROSEmount:5402AH1E64PNACAM1C1	In Stock	Medium	N/A	
FUEL OIL TANK HIGH LEVEL SWITCH, DISPLACER LEVEL SWITCH, MAGNETROL MODEL # A15-1E2B-HM3, SERIAL # 744243-01-001	In Stock	Medium	N/A	
SWITCH ASSEMBLY, LIMIT MICROSWITCH # LSA2B CABLE,SOLAR, IGNITER CENTAUR:919340C2	In Stock	Low	N/A	
PICKUP, MAGNETIC CENTAUR:P/N 190430-1	In Stock	Medium	N/A	
SWITCH, OVERSPEED CENTAUR KIT P/N1071653-2600	In Stock	Medium	N/A	
INLET GUIDE VANE POSITION TRANSMITTER, FISHER:4200 SERIES (4200)	In Stock	Medium	N/A	
RAC FILTER DRAIN SOLENOID VALVE, PARKER:H2223N	In Stock	Medium	N/A	
LUBE OIL FILTER DELTA HIGH PRESSURE SWITCH, MIDWEST:120-AA-09-0-CZ	In Stock	Medium	N/A	
LUBE OIL COOLER OUTLET TEMP GAUGE, ASHCROFT:600B-01-CEXSG	In Stock	Low	N/A	
BEARING LUBE OIL HEADER PRESS#1 LOW, PRESSURE SWITCH, UNITED ELECTRIC CONTROLS: J402-146-1521	In Stock	Medium	N/A	
BEARING LUBE OIL PRESSURE CONTROL VALVE, FISHER:ED-655	In Stock	Medium	N/A	
EMERGENCY LUBE OIL PUMP DISCHARGE - PRESSURE SWITCH, UNITED ELECTRIC CONTROLS - J400-146-1521	In Stock	Medium	N/A	
LUBE OIL RESERVOIR VACUUM - PRESSURE INDICATOR, ASHCROFT:45-11877SS-04B	In Stock	Low	N/A	
LUBE OIL RESERVOIR TEMPERATURE SWITCH, HONEYWELL:775A2009	In Stock	Medium	N/A	
MAIN LUBE OIL PUMP #1 - DISCHARGE PRESSURE SWITCH, UNITED ELECTRIC CONTROLS: J402-164-1521	In Stock	High	N/A	
OVERSPEED TRIP SENSOR #1, ELECTRO CORP:3090A35	In Stock	Low	N/A	
INLET AIR MANIFOLD PRESSURE SWITCH, UNITED ELECTRIC CONTROLS: J400K-455-1520	In Stock	Medium	TBD	
DIFFERENTIAL PRESSURE SWITCH, PNEUMAFIL:552033-B1	In Stock	Low	N/A	
INTAKE AIR STATIC FILTER DIFFERENTIAL- PRESSURE SWITCH, SOR:107AL-K12-P1-F1A	In Stock	Low	N/A	
INLET SCROLL TEMPERATURE TRANSMITTER #1, YOKAGAWA:YTA320-EA2NN/FU1/D2/Z	In Stock	Low	N/A	
RTD, #1 PRIMARY SIGNAL INLET SCROLL RTD #1 PRIMARY SIGNAL, ROSEmount:0078-N-25-N-00-A-060-T26-XA	In Stock	Low	N/A	
INSTRUMENT AIR SYSTEM PRESSURE SWITCH, UNITED ELECTRIC CONTROLS: H122-184, MFG PN 0409-007	In Stock	Low	N/A	
INSTR AIR COMPRESSOR RECEIVER - LOW PRESSURE ALARM SWITCH, UNITED ELECTRIC CONTROLS: H122-274	In Stock	Low	N/A	
INST AIR SYSTEM ISOLATION SOLENOID VALVE, ASCO:HCL8316G6MB	In Stock	Low	N/A	
INSTRAIR AIR COMPRESSOR START STOP, PRESSURE SWITCH, HUBBELL INDUSTRIAL CONTROL: 69HA109779U	In Stock	Low	N/A	
INSTRUMENT AIR COMPRESSOR LOW - OIL LEVEL INDICATOR, INGERSOLL RAND:22102388	In Stock	Low	N/A	
GENERATOR MAIN JACKING OIL PUMP - PRESSURE SWITCH, BARKSDALE:B1T-H04	In Stock	High	N/A	
GENERATOR TURBINE END BEARING - JACKING OIL FLOW SWITCH, MEISTER:DKM/A-1/10	In Stock	High	N/A	
HYD FLUID AIR BLEED VALVE, HYDAC:AEV6/5 00230023	In Stock	Low	N/A	
HYD FLUID PUMP #1 DISCHARGE - PRESSURE SWITCH, REXROTH:HED 3 OAEX/63/12	In Stock	Low	N/A	
HYD FLUID RESERVOIR - LEVEL TRANSMITTER, GEMS:XT-800	In Stock	Low	N/A	
HYD FLUID RESERVOIR LEVEL INDICATOR, REXROTH:CS3615-244910	In Stock	Low	N/A	
HYD FLUID HEADER SUPPLY - PRESSURE TRANSMITTER, ROSEmount: 3051TG4A2A21AM5Q4	In Stock	Low	N/A	
HYD FLUID COOLER FAN MOTOR - TEMPERATURE SWITCH (OFF), UNITED ELECTRIC CONTROLS: C402-120-1070-M202 135/120F	In Stock	Low	N/A	
HYD FLUID COOLER FAN MOTOR - TEMPERATURE SWITCH (ON), UNITED ELECTRIC CONTROLS: C402-120-1070-M202 135/120F	In Stock	Low	N/A	
HYD FLUID RESERVOIR HEATER - TEMPERATURE SWITCH, UNITED ELECTRIC CONTROLS: C402-120-1070-M202 73/86F	In Stock	Low	N/A	
HYD FLUID SUPPLY FILTER - DIFFERENTIAL PRESSURE SWITCH, PALL:RC0113CZ097H	In Stock	Low	N/A	
HYD FLUID RESERVOIR THERMOCOUPLE, OMEGA:NB1-CASS-14U-12" DUAL	In Stock	Low	N/A	
CHLORINE INJECTION FLOW SWITCH, DWYER INSTRUMENTS:FS2	In Stock	Low	N/A	
DOUBLE ACTING PNEUMATIC ACTUATOR, KEYSTONE MORIN, TYCO:MRP 004	In Stock	Medium	N/A	
0-500 PRESSURE TRANSMITTER, AUTOMATION DIRECT:PTD25-20-0500H	In Stock	Medium	N/A	
PRESSURE TRANSMITTER, AUTOMATION DIRECT:PTD25-20-0100H, 0-100 PSI - VARIOUS SKIDS	In Stock	Medium	N/A	
ANALOG INPUT CARD FOR PLC, VARIOUS SKIDS, AUTOMATION DIRECT:F0-04AS1	In Stock	Low	N/A	
VALVE, BALL 1.5", STAINLESS STEEL, MCMASTER CARR: 45995K84	In Stock	Low	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
PRESSURE SWITCH, BARKSDALE X1T-4100-25	In Stock	Medium	N/A	
PRESSURE SWITCH, DRUCKSCHALTER: D1 TM80 SS	In Stock	Medium	TBD	
LEVEL SWITCH MODULES, SURESITE: 87480	In Stock	Medium	N/A	
ELECTRICAL PACKAGE LOUVER ACTUATOR, ML4115B1008	In Stock	Low	N/A	
MECHANICAL PACKAGE - VENTILATION THERMOSTAT, T631C1012	In Stock	Low	N/A	
E-CELL STACK FITTINGS KIT, GENERAL ELECTRIC:3019638	In Stock	Low	N/A	
SINGLE POLE RELAYS - VARIOUS SKIDS, AUTOMATION DIRECT:781-1C-120A	In Stock	Low	N/A	
IGV ACT HYD FLUID FILTER- DIFF PRESS HIGH SWITCH, MOOG:G4444-2	In Stock	Medium	N/A	
MULTIFUNCTION MONITOR - ORP OR CONDUCTIVITY, RYAN HERCO:5924-562	In Stock	Low	N/A	
24VDC POWER SUPPLY, AUTOMATION DIRECT:PSB24-060D	In Stock	Low	N/A	
ORP SENSOR, RYAN HERCO:5909-751, RAW WATER PUMP - VARIOUS SKIDS	In Stock	Medium	N/A	
CONDUCTIVITY SENSOR - RO, RYAN HERCO:5926-200	In Stock	Medium	N/A	
MANIFOLD, PRESSURE TRANSMITTER ROSEmount 0305RC22B11	In Stock	Low	N/A	
ATOMIZING AIR HEADER PRESSURE GAUGE, PRESSURE TRANSMITTER, ROSEmount: 3051S2TG3A2A11A1AM5Q4	In Stock	Low	N/A	
BLUE MOISTURE INDICATOR, INGERSOLL RAND 705001-SP	In Stock	Low	N/A	
THERMOMETER, RESISTANCE SIEMENS:WQ 0233 2XPT100, INSTALLATION LENGTH 250MM, HAN 8D	In Stock	Low	N/A	
THERMOCOUPLE, SHELL SIEMENS:MQ 0206-PVDF8 3XTC(K), INSTALLATION LENGTH 375MM, HAN 8D	In Stock	High	N/A	
FUEL OIL UNLOADING FLOW LIQUID TURBINE FLOWMETER, HOFFER FLOW CONTROLS: HO SERIES/6X6-75-1250-CB-1M/XE2-F1CS-EXP	In Stock	Medium	N/A	
HYDRAULIC FLUID PUMP #1 - DISCHARGE PRESSURE INDICATOR, REXROTH:2-1/2/1500PUA31-10A-4 JIC	In Stock	Low	N/A	
HYDRAULIC FLUID CONDITIONING LOOP - FILTER DIFFERENTIAL PRESSURE SWITCH, PALL:RC0113CZ090H	In Stock	Low	N/A	
RAW WATER FLOW MAGNETIC FLOWMETER, ROSEmount:8705TSA060C1W0N0G1	In Stock	Low	N/A	
RAW WATER STORAGE TANK LEVEL RADAR - LEVEL TRANSMITTER, ROSEmount:5402AH1E64SPV/CAM1C1S3	In Stock	Low	N/A	
RAW WATER PUMP 1 & 2, DISCHARGE GAUGE, PRESSURE TRANSMITTER, ROSEmount: 3051S2TG2A2A11A1AB4M5Q4	In Stock	Low	N/A	
REGULATOR, SIGNAL PRESSURE STAGE 2 TEMPERATURE CONTROL VALVE - AIR SIGNAL PRESSURE REGULATOR, FISHER:R67CF-1663-38656	In Stock	Low	N/A	
LP COMPRESSOR BLEED VALVE SOLENOID, ASCO:JKC8316G034V	In Stock	Medium	N/A	
COMPRESSOR BLADE PATH THERMOCOUPLE, DUPLEX TYPE K	In Stock	High	N/A	
STARTING PACKAGE TORQUE CONVERTER PRESSURE GAUGE, KOENIG:BAC-160-25	In Stock	Low	N/A	
CAPSULEIC GUAGE 0-6" W.C., PNEUMAFL:5511646-B1	In Stock	Low	N/A	
INTAKE AIR STATIC FINAL-FILTER - DIFFERENTIAL PRESSURE INDICATOR, DWYER INSTRUMENTS:4006	In Stock	Low	N/A	
CAPSULEIC GAUGE 0-2" W.C., PNEUMAFL:S511646-B6	In Stock	Low	N/A	
PRESSURE TRANSMITTER 0-300 PSI 4-20mA, ROSEmount:3051TA3A2B21AES	In Stock	Medium	N/A	
PRESSURE REGULATOR - AIR SUPPLY FROM INST AIR COMPRESSOR, FISHER:FS64-29	In Stock	Medium	N/A	
INSTR. AIR COMPRESSOR PRESSURE GAUGE, AIR CENTERS OF FLORIDA:5ZP76	In Stock	Medium	N/A	
PRESSURE GAUGE - FOR INSTR AIR COMPRESSOR, ASHCROFT:45-13772204b, RANGE:0-200 PSI	In Stock	Low	N/A	
PRESSURE REGULATING GAUGE - AIR SUPPLY FROM INSTR AIR COMPRESSOR, FAIRCHILD:4066AT	In Stock	Low	N/A	
PRESSURE GAUGE 0-160PSI, LIQUID FILLED BACK MOUNT, STAINLESS STEEL, AUTOMATION DIRECT:G25-SL160-4LB	In Stock	Low	N/A	
PRESSURE GAUGE 0-100PSI, LIQUID FILLED LOWER MOUNTED, STAINLESS STEEL, AUTOMATION DIRECT:G25-SD100-4LS	In Stock	Low	N/A	
PRESSURE GAUGE 0-100PSI, LIQUID FILLED BACK MOUNTED, STAINLESS STEEL, AUTOMATION DIRECT:G25-SD100-4CS	In Stock	Low	N/A	
PRESSURE GAUGE 0-500PSI, LIQUID FILLED BACK MOUNTED, STAINLESS STEEL, DWYER INSTRUMENTS:SGY-D11142N-GF	In Stock	Low	N/A	
PRESSURE GAUGE 0-500 PSI, LIQUID FILLED LOWER MOUNTED, STAINLESS STEEL, DWYER INSTRUMENTS:SGY-D11122N-GF	In Stock	Low	N/A	
FLOW DIVIDER, JAHNS HYDRAULIK:MTO-2-5-G	In Stock	Medium	N/A	
TRANSMITTER, DEW POINT -100F -40F AND -100F, INGERSOLL RAND P/N 23182603	In Stock	Low	N/A	
TRUCK UPLOADING GROUND VERIFICATION MONITOR, 8030-120 GROUND VERIFICATION MONITOR, CIVACON	In Stock	Low	N/A	
MOTOR, FLAP ACTUATOR JOHNSON CONTROLS, JCI M9132-GGA-1	In Stock	Low	N/A	
BRUSH, CARBON MOTOR 1 SET = 2 PIECES, ABB: GPFX052143P0098	In Stock	Medium	N/A	
GENERATOR JACKING OIL - SOLENOID VALVE, SUN HYDRAULICS:DLLDA-MCN	In Stock	Medium	N/A	
MOTOR, 10 HP DC TURNING GEAR KOENIG: DG6711A	In Stock	High	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
MOTOR, BALDOR BALDOR:VEM3770T NEMA TURNING GEAR MOTOR BRUSH SET, 419904-51AC	In Stock	Medium	N/A	
COUPLING, PUMP/MOTOR SIZE 1040T20, FLEXIBLE GRID TYPE, VERTICAL ORIENTATION, MANUFACTURER:FALK	In Stock	Low	N/A	
RELAY, DPDT 120VAC RCP8002 120AC	In Stock	Medium	N/A	
RELAY, TPDT 120VAC RCP1103 120AC	In Stock	Medium	N/A	
CUT-OUT, AUTO AUTO CUT-OUT, CHROMOLOX:168-053169-1 05	In Stock	Low	N/A	
FUSE, AGC 1A 250V AGC 1	In Stock	Low	N/A	
FUSE, AGC 3A 250V	In Stock	Low	N/A	
FUSE, POWER CLASS J 45A A4J45	In Stock	Low	N/A	
FUSE, PRIMARY 20A ATQR20	In Stock	Low	N/A	
FUSE, SECONDARY 8A ATQR8	In Stock	Low	N/A	
CONTACTOR, 50A 120VAC 42CF35AF	In Stock	Low	N/A	
FUSE, PANEL HEATER 4.5A PANEL HEATER FUSE 4.5A, ATQR4.5	In Stock	Low	N/A	
FUSE, AC 25A ATQR25	In Stock	Low	N/A	
FUSE, SIEMENS PG SIEMENS PG 840C208F01	In Stock	Low	N/A	
FUSE, 15.0A BUSSMAN:LP-CC-15.0	In Stock	Low	N/A	
FUSE, 5.0A BUSSMAN:LP-CC-5.0	In Stock	Low	N/A	
FUSE, 1.0A BUSSMAN:LP-CC-1	In Stock	Low	N/A	
FUSE, 2.0A 300 VDC BUSSMAN:LP-CC-2	In Stock	Low	N/A	
FUSE, 3.0A BUSSMAN:LP-CC-3.0	In Stock	Low	N/A	
FUSE, 12A FUSE 12A, SIEMENS S00232012	In Stock	Low	N/A	
FUSE, 2AMP FUSE 2 AMP, GMC-2-A, BUSSMAN:GMC-2-A	In Stock	Low	N/A	
FUSE, 3AMP GMC-R FUSE 3AMP, BUSSMAN:GMC-3-R	In Stock	Low	N/A	
FUSE, 3A E-CELL E-CELL FUSE 3A, BUSSMAN:3060756	In Stock	Low	N/A	
FUSE, 25A E-CELL E-CELL FUSE 25A, BUSSMANN:1154697	In Stock	Low	N/A	
FUSE, 2A E-CELL E-CELL FUSE 2A, BUSSMANN:3060755	In Stock	Low	N/A	
FUSE, 6A GMC-6A 6AMP, GMC-6A, BUSSMANN:LWT7345	In Stock	Low	N/A	
FUSE, 1.25A GMC-1.25A FUSE 1.25 AMP, GMC-1.25-A, BUSSMANN:LWT9119	In Stock	Low	N/A	
FUSE, 8A E-CELL E-CELL FUSE 8A, MERSEN ELECTRIC POWER:3060752	In Stock	Low	N/A	
REPLACEMENT FUSE FOR AC PM'S, BENTLY NEVADA:1720025	In Stock	Low	N/A	
CONTACT BLK 1NC, SIEMENS:52BAK	In Stock	Low	N/A	
PILOT LIGHT ASSEMBLY AMBER 120VAC, A13200-05	In Stock	Low	N/A	
MODULE, TMR I/O I/O MODULE WITH INTERNAL BARRIERS - (INTERNAL TERMINATIONS)(4 X PROX/ACCEL)	In Stock	High	N/A	
MODULE, TMR I/O PROX/SEISMIC TMR I/O WITH EXTERNAL TERMINATIONS, BENTLY NEVADA:1266632-01	In Stock	High	N/A	
MODULE, PROX/VELOM I/O PROX/VELOM I/O MODULE WITH INTERNAL TERMINATIONS, BENTLY NEVADA:140471-01	In Stock	High	N/A	
MODULE, PROX/VELOM I/O PROX/VELOM I/O MODULE WITH EXTERNAL TERMINATIONS, BENTLY NEVADA:140482-01	In Stock	High	N/A	
MODULE, SHAFT ABSOLUTE SHAFT ABSOLUTE I/O MODULE WITH EXTERNAL TERMINATIONS, BENTLY NEVADA:138708-01	In Stock	High	N/A	
PROX/SEISMIC I/O MODULE WITH INTERNAL TERMINATIONS, BENTLY NEVADA:128240-01	In Stock	High	N/A	
I/O MODULE WITH INTERNAL BARRIERS - (INTERNAL TERMINATIONS) (4 X PROX/ACCEL + 2 X VELOMETER), BENTLY NEVADA:135489-02	In Stock	High	N/A	
DISCRETE INTERNAL BARRIERS I/O MODULE WITH INTERNAL TERMINATIONS, BENTLY NEVADA:136703-01	In Stock	High	N/A	
3500/42M PROXIMITOR/SEISMIC MONITOR, BENTLY NEVADA:140734-02	In Stock	High	N/A	
DISCRETE I/O MODULE WITH - EXTERNAL TERMINATIONS, BENTLY NEVADA:133434-01	In Stock	High	N/A	
3500 BUFFERED SIGNAL OUTPUT MODULE, BENTLY NEVADA:147364-01	In Stock	High	N/A	
DISCRETE I/O MODULE WITH - INTERNAL TERMINATIONS, BENTLY NEVADA:133422-01	In Stock	High	N/A	
115VAC PILOT LAMP - VARIOUS SKIDS, RADWELL INTERNATIONAL:D5N130	In Stock	Low	N/A	
3500/50 MODULE, BENTLY NEVADA:133388-02	In Stock	High	N/A	

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
WEATHER STATION DRY BULB TEMP A, VAISSALA: HMT3301A0B101CGAB200B01CABA/A1	In Stock	Low	N/A	
R-DIODE SIEMENS PG:840C411F04	In Stock	Medium	N/A	
F-DIODE SIEMENS PG:840C411F03	In Stock	Medium	N/A	
CAPACITOR ASSEMBLY,RC SIEMENS PG:153C684	In Stock	Medium	N/A	
DESICCANT, 4-8 GRADE D INGERSOLL RAND 50# BAG	In Stock	Low	N/A	
ELECTRICAL PACKAGE THERMAL DETECTOR, KIDDE-FENWAL:27121-160	In Stock	Low	N/A	
MECHANICAL PACKAGE THERMAL DETECTOR, KIDDE-FENWAL:27121-225	In Stock	Low	N/A	
SMOKE DETECTOR, NOTIFIER:FSI-851	In Stock	Medium	N/A	
TURBINE ENCLOSURE THERMAL DETECTOR, KIDDE-FENWAL:27121-325	In Stock	Low	TBD	
E-CELL SOLENOID VALVE, EMERSON:3022390	In Stock	High	N/A	
STAGE #3 DISC CAVITY TEMPERATURE - CONTROL VALVE, 3", FISHER:A41-1032425AS	In Stock	Medium	N/A	
LO BEARING PRESSURE REGULATING VALVE, FISHER:44 ACTUATOR 4 BODY 655ED	In Stock	Low	N/A	
INLET SHUTTLE VALVE, SURESITE:4010031	On Order	Low	N/A	
TRANSMITTER, GROUND FAULT SIEMENS PG:153C691G02	In Stock	Medium	N/A	
BEARING LUBE OIL SUPPLY TEMPERATURE - THERMOCOUPLE, PYCO:02-3174 W/16-0049 (TYPE K)	In Stock	Medium	N/A	
TURBINE GENERATOR SPEED PICK UP, BRAUN:A5508T165C0.5	In Stock	High	N/A	
GENERATOR MAIN JACKING OIL PUMP - PRESSURE SWITCH, BARKSDALE:B1T-H32	In Stock	Medium	N/A	
HYD FLUID CONDITIONING LOOP - PRESSURE INDICATOR, 2-1/2", REXROTH:/400PUA31-10A-4 JIC	In Stock	Low	N/A	
HYD FLUID RESERVOIR LOW LEVEL SWITCH, REXROTH:500PUA31-05 2 SW	In Stock	Low	N/A	
SPEED CONTROL, BRONZE, NUMATICS A1MN, EMERSON:LWT21254	In Stock	Low	N/A	
OPR PREAMPLIFIER, RYAN HERCO:5905-273	In Stock	Medium	N/A	
THERMOCOUPLE,DISC CAVITY LPG INDUSTRIES INC.P/N: 2335C32-001 (THERMOCOUPLE ONLY)	In Stock	Medium	N/A	
THERMOCOUPLE,DISC CAVITY DISC CAVITY THERMOCOUPLE LPG INDUSTRIES INC. P/N: 2335C32-004 (THERMOCOUPLE ONLY)	In Stock	Medium	N/A	
THERMOCOUPLE,DISC CAVITY DISC CAVITY THERMOCOUPLE LPG INDUSTRIES INC. P/N: 2335C32-003 (THERMOCOUPLE ONLY)	In Stock	Medium	N/A	
TWO LAYER CONTACT BRUSH, SIEMENS:EMT 513-005, 20X8X32 EG5U/AG20	In Stock	Medium	N/A	
POLISHING LOOP PRESSURE RELIEF VALVE, REXROTH:RR00347261	Engineering Required	Low	TBD	
STAGE #2 DISC CAVITY TEMPERATURE - CONTROL VALVE, 4", FISHER:41-1032425SR	Engineering Required	High	TBD	
HP BLEED VALVE OPEN LIMIT SWITCH, WESTLOCK:2007XBY/4SPDT	In Stock	Medium	TBD	
LP BLEED VALVE OPEN LIMIT SWITCH, WESTLOCK:2007XBY/6SPDT	In Stock	Medium	TBD	
TORQUE CONVERTER SPEED PICK UP, ELECTRO CORP.: 725833	In Procurement Process	Medium	TBD	
SWITCH, STAGER 48-03 STAGER (110V) SERIES 48-03 - W/HOMING SWITCH, OSMONICS: 48-03	In Stock	Low	N/A	
VALVE, ACTUATOR ACTUATOR, VALWORX:561055A, ELECT FOR RO INLET VALVE & RINSE VALVE -RO SKID	In Stock	Low	N/A	
SENSOR, VIBRATION GENERATOR TURBINE END VIBRATION X, BENTLY NEVADA: 3300 SERIES	In Stock	High	N/A	
TURBINE EXHAUST END VIBRATION X RELATIVE SENSOR, BENTLY NEVADA: 3500 SERIES	In Stock	High	TBD	
ANLZR,COND,8619,24V,4-20MA,BUR WATERTECH SERVICES: 3059496	In Stock	Medium	N/A	
E-CELL INLINE FLOW SENSOR, BURKERT: 3059466	In Stock	Medium	TBD	
E-CELL PRESSURE SWITCH, AUTOMATION DIRECT:3039305	In Stock	Medium	N/A	
PLC-GE, QP+, 7" COLOR, 24VDC, WATERTECH SERVICES: 3134672	In Stock	Medium	N/A	
SENSOR-FLOW, BUR, INLINE, SE30 WATERTECH SERVICES: 3059466	In Stock	Medium	N/A	
E-CELL FLOW SENSOR 8020 SHORT, BURKERT:3033067	In Stock	Medium	TBD	
METER, 30-199.9 MV E-CELL 30-199.9 MV METER, GENERAL ELECTRIC: 3038073	In Stock	Low	N/A	
TRANSMITTER, PRESSURE E-CELL PRESSURE TRANSMITTER, BURKERT:3059497	In Stock	Medium	N/A	
COMBUSTER SHELL PRESS TRANSMITTER, SIEMENS: 7MF4233-1HA10-1AC1-Z+B21+Y01+Y15	Engineering Required	High	TBD	
BEARING OIL PRESSURE TRANSMITTER, SIEMENS: 7MF4033-1CA10-1AC7-Z+B21+A02+Y01+Y21+Y15+Y16	In Procurement Process	Low	TBD	
THERMOCOUPLE, TEMPERATURE STARTING PACKAGE MOTOR STATOR - TEMPERATURE THERMOCOUPLE, S102629PD-120T305Z96	In Procurement Process	Medium	TBD	
THERMOCOUPLE, TEMPERATURE STARTING PACKAGE MOTOR FORWARD - BEARING TEMPERATURE T/C, S16820PD-300Z96	In Stock	Low	N/A	Out to tender, more information
SWITCH, AUXILIARY AUX SWITCH, SIEMENS:A01JLD64				

Recommended Component	Stock	Risk Score	Expected Delivery	Comments
OIL, COMPRESSOR ALL SEASON SELECT OIL, INGERSOIL RAND 38436721	In Stock	Medium	N/A	
INLET GUIDE VALVE HYD DEMAND CONTROL - ACUTATOR, MOOG: 85-616C101	Engineering Required	Low	TBD	
KIT, E-CELL CLAMP SET: 3033064	In Stock	Low	N/A	
PLC-AB, ANLG, 4-20, MA, 4IN, 1762-I/F4; 1227751	In Stock	Medium	N/A	
SENSOR, CONDUCTIVITY SENSOR-COND,PVDF,0.01CEL,BUR,8220: 3059495	In Stock	Medium	N/A	
TERMINAL-FUSE, 1P TYPE CC,AB: 1235396	In Stock	Medium	N/A	
TERMINAL-FUSE, LED,10-57VAC/VDC,1492-H5: 1152328	In Stock	Low	N/A	
FUSE-DELAY,600V,CLASS CC,6A,BUS: 3054531	In Stock	Low	N/A	
FUSE-BLOCK,600V,100A,MODULAR,BUS: 3020468	In Stock	Low	N/A	
FUSE-FAST,700V,80A,BUS: 3010595	In Stock	Low	N/A	
FUSE-DELAY,600V,CLASS CC,3.5A,LP-CC,BUS: 3126308	In Stock	Low	N/A	
FUSE-DELAY,600V,CLASS CC,2A,BUS: 3060753	In Stock	Low	N/A	
FUSE-DELAY,600V,CLASS CC,4A,LP-CC-4,BUS: 3060754	In Stock	Low	N/A	
FUSE-FAST,250V,CERAMIC,1A,BUS: 3055154	In Stock	Low	N/A	
FUSE-DELAY,600V,CLASS CC,1A,BUS: 3026568	In Stock	Low	N/A	
FUSE-BLOCK,690V,MIDGET,MBERSN,USM1: 3146420	In Stock	Low	N/A	
PLC-GE, QP+,7" COLOR,24VDC,IC755CSW07CDA: 3134672	In Stock	Medium	N/A	
PLC-AB,DIGITAL,24VDC,8 IN,1762-IQ8: 1224240	In Stock	Medium	N/A	
PLC-AB,20DI/12DO/4AI/4AO,1766-L32BXBA: 3060729	In Stock	Medium	N/A	
XFMR-CONTROL XFMR-CNTRL,230/575,115-50/60,500VA,SQ-D: 3060802	In Stock	Medium	N/A	
POWER SUPPLY, 24VDC POWER-SUP,PHOENIX,TRIO,24VDC,5A: 3037802	In Stock	Low	N/A	
SWITCH, PUSH BUTTON SWITCH-P,B,IEC,1NC,MAN,BLK,800FP: 3007466	In Stock	Low	N/A	
SWITCH-PUSH PULL,24VDC,IEC,MUSHRM,IL,RED: 3006380	In Stock	Low	N/A	
RELAY,3PDT,24VDC,10A,700-HA33Z24:1152099	In Stock	Medium	N/A	
RELAY,SPDT,24VDC,10A,FINDER,40.31: 3040656	In Stock	Medium	N/A	
E-CELL EDI STACKS, MK3X	In Stock	Medium	N/A	
SEAL MECHANICAL FOR FORWARDING PUMPS: 98511844	In Stock	Low	N/A	
SEAL MECHANICAL FOR RO PUMP: 9644664	In Stock	Low	N/A	
FLOW SENSOR TURBINE W/ CABLE - VARIOUS SKIDS: CW237	In Stock	Low	N/A	
BLUEWHITE CHEMICAL INJECTION PUMP:A1N00F-4T	In Stock	Low	N/A	
SOFT STARTER FOR RO: TLQATS2222D4756U	In Stock	Low	N/A	
PLC, PREPROGRAMMED- RO SKID PREPROGRAMMED PLC - RO SKID: DO-06DR-RO	In Stock	Medium	N/A	
SWITCH, 3-POSITION,22MM 3-POSITION SWITCH 22MM: GCX3320-22	In Stock	Low	N/A	
ACTUATOR ELECT FOR RO INLET VA WATERTECH SERVICES: V561055A	In Stock	Low	N/A	
SWITCH, 2-POSITION,22MM 2-POSITION SWITCH 22MM: GCX3300	In Stock	Low	N/A	
COLOR TOUCHSCREEN INTERFACE, 6" COLOR PREPROGRAMMED 6" COLOR TOUCHSCREEN OPERATOR INTERFACE PERMEATE PUMP SKID: WSEA9-PERM	In Stock	Medium	N/A	
PLC, PREPROGRAMMED - PERMATE SKID PREPROGRAMMED PLC - PERMEATE PUMP SKID: DO-06DR-D-PERM	In Stock	Medium	N/A	
PLC, PREPROGRAMMED - RAW WATER SKID PREPROGRAMMED PLC - RAW WATER PUMP SKID: DO-06DR-RW	In Stock	Medium	N/A	
COLOR TOUCHSCREEN INTERFACE, 6" COLOR PREPROGRAMMED 6" COLOR TOUCHSCREEN OPERATOR INTERFACE RAW WATER PUMP SKID: WSEA9-RW	In Stock	Medium	N/A	
COLOR TOUCHSCREEN INTERFACE, 8" COLOR TOUCHSCREEN OPERATOR INTERFACE REVERSE OSMOSIS SKID: WSEA9-8RO	In Stock	Medium	N/A	
COLOR TOUCHSCREEN INTERFACE, 10" PREPROGRAMMED 10" COLOR TOUCHSCREEN OPERATOR INTERFACE REVERSE OSMOSIS SKID: WSEA9-10 RO	In Stock	Medium	N/A	
ORP PREAMPLIFIER WATERTECH SERVICES: 5909-273	In Stock	Low	N/A	
CONDUCTIVITY MODULE FOR MULTIFUNCTION MONITOR - RO: 5908.494	In Stock	Low	N/A	



Appendix G

Critical Spares Status Listing – Hydraulic Generation

Critical Spares Stock Status

Critical Spare Component	Stock Status	Comments
BDE - ACCUMULATOR TANK Level switch	In Stock	
BDE - ACCUMULATOR TANK Pressure switch	In Stock	
BDE - ADAPTER, REMOTE I/O	In Stock	
BDE - ADAPTER, REMOTE I/O	In Stock	
BDE - ADAPTER, REMOTE I/O	In Stock	
BDE - ADAPTER, REMOTE I/O	In Stock	
BDE - BACKPLANE, 10 SLOT MODICON	In Stock	
BDE - BACKPLANE, 10 SLOT MODICON	In Stock	
BDE - BACKPLANE, 10 SLOT MODICON	In Stock	
BDE - BACKPLANE, 10 SLOT MODICON	In Stock	
BDE - BDE - PUMP, OIL IMO A3DB-275	In Stock	
BDE - BEARING KIT, IR 32127474	In Stock	
BDE - BEARING KIT, IR 32127474	In Stock	
BDE - BELT, VIR 95100160	In Stock	
BDE - BELT, VIR 95100160	In Stock	
BDE - BOARD ASSY, IRD 24144	In Stock	
BDE - BOARD ASSY, IRD 24144	In Stock	
BDE - CABLE, SERIES 925 RESOLVER	In Stock	
BDE - CABLE, SERIES 925 RESOLVER	In Stock	
BDE - CARD, IRD 31649	In Stock	
BDE - CARD, IRD 31649	In Stock	
BDE - CARD, PRINTED CIRCUIT	In Stock	
BDE - CARD, PRINTED CIRCUIT	In Stock	
BDE - COIL, AB CC236	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 2 of 40

Critical Spare Component	Stock Status	Comments
BDE - COIL, AB CC236	In Stock	
BDE - COIL, SULL 250018-971	In Stock	
BDE - CONTACT, CONTACTOR-TYPE DG-1	In Stock	
BDE - CONTACT, CONTACTOR-TYPE DG-1	In Stock	
BDE - CREEP DETECTOR ASSY, 129 VCD	In Stock	
BDE - CREEP DETECTOR ASSY, 129 VCD	In Stock	
BDE - DISCONNECT SWITCH 29-1 - Complete Unit	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE200130R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE205011R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE205012R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE205014R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE300661R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE300686R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE300690R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE300698R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE300766R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE305043R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE305069R0001	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE30598R1	In Stock	
BDE - EXCITATION CONTROLS - CARD, ABB HIEE401481RD001	In Stock	
BDE - EXCITATION CONTROLS - COIL, ABB HIER464920P1	In Stock	
BDE - EXCITATION CONTROLS - Field Flashing Resistor	In Stock	
BDE - EXCITATION CONTROLS - Field Flashing Resistor	In Stock	
BDE - EXCITATION CONTROLS - MAINBOARD, ABB HIER465176R22	In Stock	
BDE - EXCITATION CONTROLS - POWER SUPPLY, TRACO HIER46651-	In Stock	
BDE - EXCITATION CONTROLS - POWER SUPPLY, TRACO HIER46651-	In Stock	
BDE - EXCITATION CONTROLS - RESISTOR, FIELD DISCHARGE	In Stock	
BDE - EXCITATION CONTROLS - SHUNT, ABB UXAB269330R909	In Stock	
BDE - EXCITATION CONTROLS - VARISTOR, ABB 3ACD5245A003	In Stock	
BDE - Exciter POWER ELECTRONICS - BRIDGE, ABB S00772	In Stock	
BDE - Exciter POWER ELECTRONICS - FAN ASSY, ABB 500773	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 3 of 40

Critical Spare Component	Stock Status	Comments
BDE - Exciter POWER ELECTRONICS - FUSE, ABB 6,6URD32TTF0800	In Stock	
BDE - Exciter POWER ELECTRONICS - Pulse Transformers	In Stock	
BDE - Exciter POWER ELECTRONICS - THYRISTOR, ABB 5STP27F1200	In Stock	
BDE - FIELD BREAKER QO2 - PANEL EE - ARC-CHUTE, ABB UXAB269399R012	In Stock	
BDE - FIELD BREAKER QO2 - PANEL EE - BREAKER, ABB HIER466757P2331 (entire unit)	In Stock	
BDE - FIELD BREAKER QO2 - PANEL EE - CONTACT, ABB UXAB239299R0003	In Stock	
BDE - FIELD BREAKER QO2 - PANEL EE - CONTACT, ABB UXAB239Z60R002	In Stock	
BDE - FIELD BREAKER QO2 - PANEL EE - CONTACT, ABB UXAB269399R032	In Stock	
BDE - FIELD BREAKER QO2 - PANEL EE - SHUNT, ABB UXAB269350R909	In Stock	
BDE - FILTER, AIR (ELEMENT ONLY)	In Stock	
BDE - FILTER, COOLANT (ELEMENT ONLY)	In Stock	
BDE - GAS, INERGEN (350F3)	In Stock	
BDE - GAS, INERGEN (425F3)	In Stock	
BDE - GASKET KIT, IR X1453T47	In Stock	
BDE - GASKET SET, IR 30423339	In Stock	
BDE - GASKET SET, IR 30423339	In Stock	
BDE - GASKET, FLEXMASTER 250007-559	In Stock	
BDE - GASKET, SULL 040517	In Stock	
BDE - GATE HOIST - BAY D'ESPOIR - ST - Remote I/O Adapter	In Stock	
BDE - GENERATOR - CREEP DETECTOR ASSY, 129 VCD	In Stock	
BDE - GENERATOR - PLATES, BRAKE (24 PER SET)	In Stock	
BDE - GENERATOR - SWITCH, WOODWARD 8935-139	In Stock	
BDE - Generator SLIRPRING/BRUSH RIGGING - Brush Holders	In Stock	
BDE - Generator SLIRPRING/BRUSH RIGGING - Carbon Brushes	In Stock	
BDE - Generator SLIRPRING/BRUSH RIGGING - Slip Ring	In Stock	
BDE - GOVERNOR - BEARING, DASHPOT LINK	In Stock	
BDE - GOVERNOR - BRACKET, WOODWARD 11002-57	In Stock	
BDE - GOVERNOR - BRACKET, WOODWARD 91588	In Stock	
BDE - GOVERNOR - BUSHING, DASHPOT - LARGE	In Stock	
BDE - GOVERNOR - BUSHING, DASHPOT - SMALL	In Stock	
BDE - GOVERNOR - BUSHING, PILOT VALVE	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 4 of 40

Critical Spare Component	Stock Status	Comments
BDE - GOVERNOR - BUSHING, SNAP ACTION	In Stock	
BDE - GOVERNOR - BUSHING, WW 11002-65	In Stock	
BDE - GOVERNOR - CABLE, AIRCRAFT 1/4 187083	In Stock	
BDE - GOVERNOR - CLIP, WW 11002-16	In Stock	
BDE - GOVERNOR - COIL, DASHPOT	In Stock	
BDE - GOVERNOR - COIL, PARTIAL SHUTDOWN RESET	In Stock	
BDE - GOVERNOR - COIL, SHUTDOWN SOLENOID	In Stock	
BDE - GOVERNOR - COIL, SHUTDOWN SOLENOID 65SD	In Stock	
BDE - GOVERNOR - COIL, WW 202132	In Stock	
BDE - GOVERNOR - CONTACT, CONTACTOR-TYPE DG-	In Stock	
BDE - GOVERNOR - DASHPOT, WW 161314	In Stock	
BDE - GOVERNOR - DIODE, WW 202891	In Stock	
BDE - GOVERNOR - DISC, RELIEF VALVE	In Stock	
BDE - GOVERNOR - DISC, UNLOADER	In Stock	
BDE - GOVERNOR - FILTER, HYD 932633Q	In Stock	
BDE - GOVERNOR - GASKET KIT, WOODWARD 8926-137	In Stock	
BDE - GOVERNOR - GASKET, WOODWARD 1327-816	In Stock	
BDE - GOVERNOR - GASKET, WOODWARD 206317	In Stock	
BDE - GOVERNOR - LEVER, CONNECTING LOWER	In Stock	
BDE - GOVERNOR - LEVER, LOWER FLOATING	In Stock	
BDE - GOVERNOR - LEVER, UPPER FLOATING	In Stock	
BDE - GOVERNOR - LINK, WOODWARD 070346	In Stock	
BDE - GOVERNOR - LOCKWASHER, BEARING	In Stock	
BDE - GOVERNOR - MOTOR ASSY, C/W SHAFT & GEAR	In Stock	
BDE - GOVERNOR - MOTOR ASSY, GATE LIMIT	In Stock	
BDE - GOVERNOR - MOTOR, VIBRATING OIL	In Stock	
BDE - GOVERNOR - MOTOR, GOVERNOR SPEED 28 VOLT	In Stock	
BDE - GOVERNOR - MOTOR, SYNCHRONIZING	In Stock	
BDE - GOVERNOR - PIN, BALLARM	In Stock	
BDE - GOVERNOR - PIN, DASHPOT	In Stock	
BDE - GOVERNOR - PIN, LOWER DRIVE	In Stock	

Critical Spare Component	Stock Status	Comments
BDE - GOVERNOR - PIN, PIVOT	In Stock	
BDE - GOVERNOR - PIN, WOODWARD 11002-71	In Stock	
BDE - GOVERNOR - PIN, WOODWARD 11002-75	In Stock	
BDE - GOVERNOR - PLUNGER, SNAP ACTION	In Stock	
BDE - GOVERNOR - POTENTIOMETER, 1250OH 0.24A	In Stock	
BDE - GOVERNOR - PUMP, OIL IMO A3DB-275	In Stock	
BDE - GOVERNOR - RETAINER, SWITCH	In Stock	
BDE - GOVERNOR - RING, SNAP (PILOT SERVO PLUG)	In Stock	
BDE - GOVERNOR - ROTOR, BALL HEAD MOTOR	In Stock	
BDE - GOVERNOR - SOLENOID, 125 V DC	In Stock	
BDE - GOVERNOR - SOLENOID, 125VDC 211E	In Stock	
BDE - GOVERNOR - SPRING, PILOT VALVE LINK	In Stock	
BDE - GOVERNOR - SPRING, RELIEF	In Stock	
BDE - GOVERNOR - SPRING, UNLOADER	In Stock	
BDE - GOVERNOR - STATOR, BALL HEAD MOTOR	In Stock	
BDE - GOVERNOR - SWITCH, PRESS OIL ALARM	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BALLARM, SPEED SWITCH	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BEARING, PMG P/N Z995205	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BEARING, SPEED SIGNAL	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BEARING, WW 111006	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BEARING, WW 1800125	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BUSHING, OILITE OVERSPEED SWITCH	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BUSHING, URETHANE LOWER D	In Stock	
BDE - GOVERNOR SPEED GENERATOR - BUSHING, URETHANE UPPER D	In Stock	
BDE - GOVERNOR SPEED GENERATOR - PIN, BALLARM	In Stock	
BDE - GOVERNOR SPEED GENERATOR - PIN, DOWEL - SPEED SWITCH	In Stock	
BDE - GOVERNOR SPEED GENERATOR - PIN, ROCKER ARM	In Stock	
BDE - GOVERNOR SPEED GENERATOR - PIN, TAPERED	In Stock	
BDE - GOVERNOR SPEED GENERATOR - PLATE, MOUNTING - MERCURY	In Stock	
BDE - GOVERNOR SPEED GENERATOR - RING, ROTOR	In Stock	
BDE - GOVERNOR SPEED GENERATOR - SPRING, SPEED SWITCH	In Stock	

Critical Spare Component	Stock Status	Comments
BDE - GOVERNOR SPEED GENERATOR - STATOR, P.M.G.	In Stock	
BDE - GUIDE BEARING SEGMENTS - Bearing Segments,	In Stock	
BDE - HEADCOVER ASSEMBLY - UNIT 1 - BUSHING, UPPER HEAD COVER P003	In Stock	
BDE - HEADCOVER ASSEMBLY - UNIT 1 - BUSHING, UPPER WICKET	In Stock	
BDE - Heat Sink Exciter	In Stock	
BDE - INTAKE GATE - BACKPLANE, 6 SLOT MODICON	In Stock	
BDE - INTAKE STRUCTURE NO. 1 - TRANSMITTER, PRESS 0-6MH20	In Stock	
BDE - ISOLATED PHASE BUS - CT 50/51	In Stock	
BDE - ISOLATED PHASE BUS - Surge Capacitor	In Stock	
BDE - ISOLATED PHASE BUS - Surge Capacitor	In Stock	
BDE - ISOLATED PHASE BUS - XFMR, CT 1000:	In Stock	
BDE - ISOLATED PHASE BUS - XFMR, CT 13.8KV	In Stock	
BDE - ISOLATED PHASE BUS - XFMR, CT 30332313	In Stock	
BDE - ISOLATED PHASE BUS - XFMR, CT 800:5	In Stock	
BDE - ISOLATED PHASE BUS - XFMR, PT 14400KV	In Stock	
BDE - METER, TEMP DIGITAL	In Stock	
BDE - METER, TEMP DIGITAL	In Stock	
BDE - MODULE, ANALOG QUANTUM	In Stock	
BDE - MODULE, ANALOG QUANTUM	In Stock	
BDE - MODULE, ANALOG QUANTUM	In Stock	
BDE - MODULE, ANALOG QUANTUM	In Stock	
BDE - MODULE, CPU MODICON	In Stock	
BDE - MODULE, CPU MODICON	In Stock	
BDE - MODULE, CPU MODICON	In Stock	
BDE - MODULE, DISCRETE IN	In Stock	
BDE - MODULE, DISCRETE IN	In Stock	
BDE - MODULE, DISCRETE IN	In Stock	
BDE - MODULE, DISCRETE IN	In Stock	
BDE - MODULE, DISCRETE OUT	In Stock	
BDE - MODULE, DISCRETE OUT	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 7 of 40

Critical Spare Component	Stock Status	Comments
BDE - MODULE, DISCRETE OUT	In Stock	
BDE - MODULE, DISCRETE OUT	In Stock	
BDE - MODULE, ETHERNET QUANTUM	In Stock	
BDE - MODULE, ETHERNET QUANTUM	In Stock	
BDE - MODULE, ETHERNET QUANTUM	In Stock	
BDE - MODULE, GPS QUANTUM	In Stock	
BDE - MODULE, GPS QUANTUM	In Stock	
BDE - MODULE, GPS QUANTUM	In Stock	
BDE - MODULE, HOT STANDBY	In Stock	
BDE - MODULE, HOT STANDBY	In Stock	
BDE - MODULE, HOT STANDBY	In Stock	
BDE - MODULE, INTERFACE PLC	In Stock	
BDE - MODULE, INTERFACE PLC	In Stock	
BDE - MODULE, INTERFACE PLC	In Stock	
BDE - MODULE, INTERFACE PLC	In Stock	
BDE - MODULE, INTERFACE PLC	In Stock	
BDE - MODULE, INTERFACE PLC	In Stock	
BDE - MODULE, RACK FILLER	In Stock	
BDE - MODULE, RACK FILLER	In Stock	
BDE - MODULE, RACK FILLER	In Stock	
BDE - MODULE, RELAY OUT	In Stock	
BDE - MODULE, RELAY OUT	In Stock	
BDE - MODULE, RELAY OUT	In Stock	
BDE - MONITOR, 15" TOUCHSCREEN	In Stock	
BDE - MOTOR, ELECT 15HP 575V	In Stock	
BDE - MOTOR, ELECT 15HP 575V	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 8 of 40

Critical Spare Component	Stock Status	Comments
BDE - MOTOR, SYNCHRONIZING	In Stock	
BDE - MOTOR, SYNCHRONIZING	In Stock	
BDE - NEUTRAL GROUND TRANSFORMER	In Stock	
BDE - PACKING, V TYPE 2-EASY	In Stock	
BDE - PACKING, V TYPE 2-EASY	In Stock	
BDE - PACKING, V TYPE 2-EASY	In Stock	
BDE - PACKING, V TYPE 2-EASY	In Stock	
BDE - PANEL STATION SERVICE - PH #2 - ACB	In Stock	
BDE - PEN ARM MOVEMENT ASSY, RECORDR	In Stock	
BDE - PEN ARM MOVEMENT ASSY, RECORDR	In Stock	
BDE - PENSTOCK NO. 1 - TRANSMITTER, PRESS 0-375	In Stock	
BDE - PENSTOCK NO. 2 - TRANSMITTER, PRESS 0-375	In Stock	
BDE - PENSTOCK NO. 3 - TRANSMITTER, PRESS 0-375	In Stock	
BDE - PENSTOCK NO. 4 - TRANSMITTER, PRESS 0-375	In Stock	
BDE - PICK-UP, MAGNETIC 5430-929	In Stock	
BDE - PICK-UP, MAGNETIC 5430-929	In Stock	
BDE - PICK-UP, NON-CONTACT	In Stock	
BDE - PICK-UP, NON-CONTACT	In Stock	
BDE - PICK-UP, SPEED SENSING	In Stock	
BDE - PICK-UP, SPEED SENSING	In Stock	
BDE - piston D/S	In Stock	
BDE - piston U/S	In Stock	
BDE - PISTON, PIN ASSY PE#32054504	In Stock	
BDE - PISTON, PIN ASSY PE#32054538	In Stock	
BDE - PISTON/PIN ASSY, IR 30215222	In Stock	
BDE - PISTON/PIN ASSY, IR 30215222	In Stock	
BDE - PISTON/PIN ASSY, IR 30215438	In Stock	
BDE - PISTON/PIN ASSY, IR 30215438	In Stock	
BDE - PISTON/PIN ASSY, IR 30292460	In Stock	
BDE - PISTON/PIN ASSY, IR 30292460	In Stock	
BDE - PLC, Model Quantum- Modicon - ADAPTER, REMOTE I/O	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
Page 9 of 40

Critical Spare Component	Stock Status	Comments
BDE - PLC, Model Quantum- Modicon - BACKPLANE, 10 SLOT MODICON	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, ANALOG QUANTUM	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, CPU MODICON	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, DISCRETE IN	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, DISCRETE OUT	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, ETHERNET QUANTUM	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, GPS QUANTUM	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, HOT STANDBY	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, INTERFACE PLC	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, RACK FILLER	In Stock	
BDE - PLC, Model Quantum- Modicon - MODULE, RELAY OUT	In Stock	
BDE - PLC, Model Quantum- Modicon - POWER SUPPLY, 125-24 VDC	In Stock	
BDE - PLC, Model Quantum- Modicon - POWER SUPPLY, 125 VDC	In Stock	
BDE - PLC, Model Quantum- Modicon - POWER SUPPLY, 125VDC 8A	In Stock	
BDE - PLC, Model Quantum- Modicon - POWER SUPPLY, 24 VDC	In Stock	
BDE - PLC, Model Quantum- Modicon - REMOTE I/O HEAD, MODICON	In Stock	
BDE - POTENTIOMETER, 1250OH 0.24A	In Stock	
BDE - POTENTIOMETER, 1250OH 0.24A	In Stock	
BDE - POTENTIOMETER, 1250OH 0.24A	In Stock	
BDE - POTENTIOMETER, 1K OH .244 A	In Stock	
BDE - POTENTIOMETER, 1K OH .244 A	In Stock	
BDE - POTENTIOMETER, 25W 50 OHMS	In Stock	
BDE - POTENTIOMETER, 25W 50 OHMS	In Stock	
BDE - POTENTIOMETER, SPEED	In Stock	
BDE - POTENTIOMETER, SPEED	In Stock	
BDE - POWER SUPPLY, 125-24 VDC	In Stock	
BDE - POWER SUPPLY, 125-24 VDC	In Stock	
BDE - POWER SUPPLY, 125-24 VDC	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 10 of 40

Critical Spare Component	Stock Status	Comments
BDE - POWER SUPPLY, 125-24 VDC	In Stock	
BDE - POWER SUPPLY, 125 VDC	In Stock	
BDE - POWER SUPPLY, 125 VDC	In Stock	
BDE - POWER SUPPLY, 125 VDC	In Stock	
BDE - POWER SUPPLY, 125 VDC	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 125V/DC 8A	In Stock	
BDE - POWER SUPPLY, 24 VDC	In Stock	
BDE - POWER SUPPLY, 24 VDC	In Stock	
BDE - POWER SUPPLY, 24 VDC	In Stock	
BDE - POWER SUPPLY, 24 VDC	In Stock	
BDE - POWER SUPPLY, 24 VDC	In Stock	
BDE - POWER SUPPLY, 24 VDC	In Stock	
BDE - POWER SUPPLY, 24 VDC	In Stock	
BDE - POWER SUPPLY, 24V/DC	In Stock	
BDE - POWER SUPPLY, 24V/DC	In Stock	
BDE - POWER SUPPLY, 24V/DC	In Stock	
BDE - POWER SUPPLY, 300W	In Stock	
BDE - POWER SUPPLY, 300W	In Stock	
BDE - POWER SUPPLY, 48V/DC 240W	In Stock	
BDE - POWER SUPPLY, 48V/DC 240W	In Stock	
BDE - PROBE SYSTEM, CAPACITANCE	In Stock	
BDE - PROBE SYSTEM, CAPACITANCE	In Stock	
BDE - PROBE, CAPACITANCE	In Stock	
BDE - PROBE, CAPACITANCE	In Stock	
BDE - PROCESSOR, MICRO-CENTRAL	In Stock	
BDE - PROCESSOR, MICRO-CENTRAL	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 11 of 40

Critical Spare Component	Stock Status	Comments
BDE - PROCESSOR, PLC	In Stock	
BDE - PROCESSOR, PLC	In Stock	
BDE - PROCESSOR, PROG C/W 1772-MJ	In Stock	
BDE - PROCESSOR, PROG C/W 1772-MJ	In Stock	
BDE - PROTRACTOR, ANSUL 423958	In Stock	
BDE - PUMP, OIL IMO A3DB-275	In Stock	
BDE - RECTIFYING TRANSFORMER - Full Unit	In Stock	
BDE - RECTIFYING TRANSFORMER - Insulating Fluid	In Stock	
BDE - REGULATOR KIT, SULL 250019-453	In Stock	
BDE - RELAY, ADJUSTABLE AC V SENSOR	In Stock	
BDE - RELAY, ADJUSTABLE AC V SENSOR	In Stock	
BDE - RELAY, GROUND VOLTAGE	In Stock	
BDE - RELAY, INSTANTANEOUS CURRENT	In Stock	
BDE - RELAY, INSTANTANEOUS CURRENT	In Stock	
BDE - RELAY, INSTANTANEOUS CURRENT	In Stock	
BDE - RELAY, LEVEL CONTROL #1001	In Stock	
BDE - RELAY, OVERCURRENT 1600A 3POLE	In Stock	
BDE - RELAY, UNDERVOLTAGE 125VAC	In Stock	
BDE - REMOTE I/O HEAD, MODICON	In Stock	
BDE - REMOTE I/O HEAD, MODICON	In Stock	
BDE - REMOTE I/O HEAD, MODICON	In Stock	
BDE - RING SET, IR 32194144	In Stock	
BDE - RING, PISTON SERVO MOTOR 18"OD	In Stock	
BDE - RING, PISTON SERVO MOTOR 18"OD	In Stock	
BDE - ROTOR POLES - Pole	In Stock	
BDE - ROTOR SHAFT - Rotating Ring	In Stock	
BDE - RUNNER - UNIT 1 - BOLT, SHAFT TO RUNNER	In Stock	
BDE - Seal Movable	In Stock	

Critical Spare Component	Stock Status	Comments
BDE - Seal Stationary	In Stock	
BDE - Seal Stationary	In Stock	
BDE - SENSOR, CABLE REEL LINEAR	In Stock	
BDE - SHAFT, SERVOMOTOR 4140	In Stock	
BDE - SHAFT, SERVOMOTOR 4140	In Stock	
BDE - SHAFT, SERVOMOTOR 4140	In Stock	
BDE - SHAFT, SERVOMOTOR 4140	In Stock	
BDE - SPILLWAY #1-SALMON RIVE - Lift Gearboxes/Nuts	In Stock	
BDE - STATION SERVICE - BDE PH1 - ACB	In Stock	
BDE - STATION SERVICE - BDE PH1 - Trip Unit - Breker Control Device	In Stock	
BDE - Stationary Ring	In Stock	
BDE - STATOR ASSEMBLY - BAR, COPPER 1/2"X2"X10'	In Stock	
BDE - STATOR ASSEMBLY - BAR, ROTOR CONNECTION	In Stock	
BDE - STATOR ASSEMBLY - BAR, ROTOR CONNECTION	In Stock	
BDE - STATOR ASSEMBLY - BAR, STATOR	In Stock	
BDE - STATOR ASSEMBLY - BAR, STATOR	In Stock	
BDE - STATOR WINDINGS - UNIT 1 - CONNECTOR, STATOR CU	In Stock	
BDE - STATOR WINDINGS - UNIT 1 to 4 - Coils	In Stock	
BDE - SURFACE AIR COOLERS - SAC Unit	In Stock	
BDE - SURFACE AIR COOLERS - Tubes	In Stock	
BDE - THRUST BEARING SEGMENTS - Bearing Segments,	In Stock	
BDE - THRUST/GUIDE BEARING ASSEMBLY - Oil	In Stock	
BDE - THRUST/GUIDE BEARING ASSEMBLY - Springs	In Stock	
BDE - THRUST/GUIDE BEARING ASSEMBLY - TRANSMITTER, DIFF	In Stock	
BDE - THRUST/GUIDE BEARING COOLERS - Cooler	In Stock	
BDE - TURBINE - Turbine Carbon Seal (Units 1 to 4)	In Stock	
BDE - TURBINE - Turbine Carbon Seal (Units 5 & 6)	In Stock	
BDE - TURBINE GUIDE BEARING - Bearing	In Stock	
BDE - TURBINE GUIDE BEARING - Oil Cooler	In Stock	
BDE - Unit 7 Control Board - BOARD, CONTROL	In Stock	
BDE - Unit 7 DRAFT TUBE-TURBINE - Water Level Probe	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 13 of 40

Critical Spare Component	Stock Status	Comments
BDE - UNIT 7 EXCITER - BOARD, DIGITAL I/O	In Stock	
BDE - UNIT 7 EXCITER - BOARD, I/O ANALOG	In Stock	
BDE - UNIT 7 EXCITER - BOARD, MEASURING ABB	In Stock	
BDE - UNIT 7 EXCITER - BOARD, POWER SYSTEM STABILIZER	In Stock	
BDE - UNIT 7 EXCITER - CAPACITOR, 20 MF +10% 150 V	In Stock	
BDE - UNIT 7 EXCITER - COMPONENT, INTEG CCT	In Stock	
BDE - UNIT 7 EXCITER - CONTACT, ISOLATING	In Stock	
BDE - UNIT 7 EXCITER - INTEG CCT	In Stock	
BDE - UNIT 7 EXCITER - MODULE, ABB DCS500B200361	In Stock	
BDE - UNIT 7 EXCITER - PANEL, CONTROL	In Stock	
BDE - UNIT 7 EXCITER - POWER SUPPLY, ABB 3BHE013940R00	In Stock	
BDE - UNIT 7 EXCITER - RELAY, GROUND VOLTAGE	In Stock	
BDE - Unit 7 GENERATOR COOLING WATER SYSTEM - TRANSMITTER, DIFF	In Stock	
BDE - Unit 7 Generator Field Breaker - ARC CHUTE, ABB UXAB289199215	In Stock	
BDE - Unit 7 Generator Field Breaker - BREAKER, ABB EZNE1600IVS4-B1	In Stock	
BDE - Unit 7 Generator Field Breaker - Charging Motor	In Stock	
BDE - Unit 7 Generator Field Breaker - COIL, SHUNT CLOSING	In Stock	
BDE - Unit 7 Generator Field Breaker - COIL, SHUNT OPENING	In Stock	
BDE - Unit 7 Generator Field Breaker - CONTACT, ABB UXAB239Z60R0	In Stock	
BDE - Unit 7 Generator Field Breaker - Main Fixed Contacts	In Stock	
BDE - Unit 7 Generator Field Breaker - Main Moving Contacts	In Stock	
BDE - Unit 7 Generator Field Breaker - MOTOR, CHARGING	In Stock	
BDE - Unit 7 GENERATOR GUIDE BEARING - Segments	In Stock	
BDE - UNIT 7 GOVERNOR - FILTER, HYD 932633Q	In Stock	
BDE - UNIT 7 GOVERNOR - PIN, BALLARM	In Stock	
BDE - UNIT 7 GOVERNOR - PIN, DASHPOT	In Stock	
BDE - UNIT 7 GOVERNOR - PIN, LOWER DRIVE	In Stock	
BDE - UNIT 7 GOVERNOR - PIN, PIVOT	In Stock	
BDE - UNIT 7 GOVERNOR - PIN, ROCKER ARM	In Stock	
BDE - UNIT 7 GOVERNOR - PIN, WOODWARD 11002-71	In Stock	
BDE - UNIT 7 GOVERNOR - PIN, WOODWARD 11002-75	In Stock	

Critical Spare Component	Stock Status	Comments
BDE - UNIT 7 GOVERNOR - PLUNGER, SNAP ACTION	In Stock	
BDE - UNIT 7 GOVERNOR - POTENTIOMETER, 1250OH 0.24A	In Stock	
BDE - UNIT 7 GOVERNOR - PUMP, OIL IMO A3DB-275	In Stock	
BDE - UNIT 7 GOVERNOR - RETAINER, SWITCH	In Stock	
BDE - UNIT 7 GOVERNOR - RING, SNAP (PILOT SERVO PLUG)	In Stock	
BDE - UNIT 7 GOVERNOR - ROTOR, BALL HEAD MOTOR	In Stock	
BDE - UNIT 7 GOVERNOR - SENSOR, LOAD GOVERNOR	In Stock	
BDE - UNIT 7 GOVERNOR - SOLENOID, 125 V DC	In Stock	
BDE - UNIT 7 GOVERNOR - SOLENOID, 125VDC 211E	In Stock	
BDE - UNIT 7 GOVERNOR - SPRING, PILOT VALVE LINK	In Stock	
BDE - UNIT 7 GOVERNOR - SPRING, SPEED SWITCH	In Stock	
BDE - UNIT 7 GOVERNOR - STATOR, BALL HEAD MOTOR	In Stock	
BDE - UNIT 7 GOVERNOR - STATOR, PERMANENT MAGNET	In Stock	
BDE - UNIT 7 GOVERNOR - SWITCH, PRESS OIL ALARM	In Stock	
BDE - UNIT 7 GOVERNOR - Unloader/Relief Valve	In Stock	
BDE - UNIT 7 GOVERNOR - Unloader/Relief Valve	In Stock	
BDE - Unit 7 HEADCOVER ASSEMBLY - BOTTOM RING P001 bushing	In Stock	
BDE - Unit 7 HEADCOVER ASSEMBLY - BUSHING, LOWER HEAD COVER P001	In Stock	
BDE - Unit 7 HEADCOVER ASSEMBLY - PACKING, V-TYPE 3/8 EASY	In Stock	
BDE - UNIT 7 HYDRAULIC GENERATOR - Coolers	In Stock	
BDE - Unit 7 NEUTRAL GROUND TRANSFORMER - Transformer	In Stock	
BDE - Unit 7 OPERATING RING - BUSHING, LINK PIN	In Stock	
BDE - Unit 7 OPERATING RING - CAP, SHEARPIN	In Stock	
BDE - Unit 7 OPERATING RING - LEVER, WICKET GATE	In Stock	
BDE - Unit 7 OPERATING RING - Linkage	In Stock	
BDE - Unit 7 OPERATING RING - PIN, ECCENTRIC P005	In Stock	
BDE - Unit 7 OPERATING RING - PIN, LINK P006	In Stock	
BDE - Unit 7 OPERATING RING - PIN, ROD SHEARPIN	In Stock	
BDE - Unit 7 OPERATING RING - PIN, UPPER DRIVE	In Stock	
BDE - Unit 7 PMG - BALLARM, SPEED SWITCH	In Stock	
BDE - Unit 7 PMG - BEARING, PMG P/N Z995205	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 15 of 40

Critical Spare Component	Stock Status	Comments
BDE - Unit 7 PMG - BEARING, SPEED SIGNAL	In Stock	
BDE - Unit 7 PMG - BEARING, WW 111006	In Stock	
BDE - Unit 7 PMG - BEARING, WW 1800125	In Stock	
BDE - Unit 7 PMG - BUSHING, OILITE OVERSPEED SWITCH ASSEMBLY	In Stock	
BDE - Unit 7 PMG - BUSHING, URETHANE LOWER D	In Stock	
BDE - Unit 7 PMG - BUSHING, URETHANE UPPER D	In Stock	
BDE - Unit 7 PMG - PIN, BALLARM	In Stock	
BDE - Unit 7 PMG - PIN, DOWEL - SPEED SWITCH	In Stock	
BDE - Unit 7 PMG - PIN, ROCKER ARM	In Stock	
BDE - Unit 7 PMG - PIN, TAPERED	In Stock	
BDE - Unit 7 PMG - PLATE, MOUNTING - MERCURY	In Stock	
BDE - Unit 7 PMG - RING, ROTOR	In Stock	
BDE - Unit 7 PMG - SPRING, SPEED SWITCH	In Stock	
BDE - Unit 7 PMG - STATOR, P.M.G.	In Stock	
BDE - Unit 7 RECTIFYING TRANSFORMER	In Stock	
BDE - Unit 7 ROTOR - Pole	In Stock	
BDE - Unit 7 ROTOR ASSEMBLY - POLE	In Stock	
BDE - Unit 7 RUNNER - TURBINE - CARBON SEAL	In Stock	
BDE - Unit 7 SERVOMOTOR # 1 - PACKING, SERVOMOTOR	In Stock	
BDE - Unit 7 SERVOMOTOR # 1 - PACKING, V TYPE 2-EASY	In Stock	
BDE - Unit 7 SERVOMOTOR # 1 - PACKING, V-TYPE 9"X8"ID	In Stock	
BDE - Unit 7 SERVOMOTOR # 1 - Piston Ring	In Stock	
BDE - Unit 7 SLIPRING/BRUSH RIGGING - Brushes	In Stock	
BDE - Unit 7 SLIPRING/BRUSH RIGGING - Collector Rings	In Stock	
BDE - Unit 7 STATOR WINDINGS - Stator Bars	In Stock	
BDE - Unit 7 STATOR WINDINGS - Wedges	In Stock	
BDE - Unit 7 SURFACE AIR COOLERS - Tubes	In Stock	
BDE - Unit 7 THRUST BEARING - Rotating Ring	In Stock	
BDE - Unit 7 THRUST BEARING - Thrust Pads	In Stock	
BDE - Unit 7 THRUST/GUIDE BEARING COOLERS - Coolers	In Stock	
BDE - UNIT 7 TURBINE - Carbon Seal	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 16 of 40

Critical Spare Component	Stock Status	Comments
BDE - UNIT 7 TURBINE - Turbine Bearing	In Stock	
BDE - UNIT 7 TURBINE - Wicket Gate	In Stock	
BDE - Unit 7 TURBINE GUIDE BEARING - Bearing	In Stock	
BDE - Unit 7 VIBRATION MONITORING - PICK-UP, NON-CONTACT	In Stock	
BDE - Unit 7 VIBRATION MONITORING - PICK-UP, SPEED SENSING	In Stock	
BDE - Unit 7 VIBRATION MONITORING - POWER SUPPLY, IRD PCB 29128	In Stock	
BDE - Unit 7 WICKET GATES - GATE, WICKET	In Stock	
BDE - VALVE, 1" THERMAL TRIP	In Stock	
BDE - VALVE, CONT.1/2 4-WAY SS	In Stock	
BDE - VALVE, CONT.1/2 4-WAY SS	In Stock	
BDE - VALVE, CONT.1/2"4-WAY SS	In Stock	
BDE - VALVE, CONT.1/2 4-WAY SS	In Stock	
BDE - VALVE, CONTROL 1" SS	In Stock	
BDE - VALVE, CONTROL 1" SS	In Stock	
BDE - VALVE, CONTROL 1" SS	In Stock	
BDE - VALVE, CONTROL 2" SS	In Stock	
BDE - VALVE, CONTROL 2" SS	In Stock	
BDE - VALVE, CONTROL 2" SS	In Stock	
BDE - VALVE, CONTROL 2" SS	In Stock	
BDE - WICKET GATES AND LINKAGES - PACKING, V TYPE 2-EASY	In Stock	
BDE - WICKET GATES AND LINKAGES - PIN, ECCENTRIC	In Stock	
BDE - WICKET GATES AND LINKAGES - RING, PISTON SERVO MOTOR 18"OD	In Stock	
BDE - WICKET GATES AND LINKAGES - Shear Pins	In Stock	
BDE - 7 Slip Ring	In Stock	
BDE- C/T 50/51	In Stock	
CAT - ACCUMULATOR TANK - Air Admission Valve	In Stock	
CAT - ACCUMULATOR TANK - COIL AUTO AIR CHARGING SOLND	In Stock	
CAT - ARC-CHUTE ABB #15DA04569R1	In Stock	
CAT - ARC-CHUTE STATION SERVICE, 3 PHASE, 600V	In Stock	
CAT - BEARING KIT, IR 32127516	In Stock	
CAT - BEARING, GUIDE	In Stock	
CAT - BEARING, BOWL - INTERMEDIATE	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 17 of 40

Critical Spare Component	Stock Status	Comments
CAT - BEARING, BOWL - TOP	In Stock	
CAT - BEARING, BRIER HYD33A66	In Stock	
CAT - BEARING, LINESHAFT	In Stock	
CAT - BEARING, STUFFING BOX	In Stock	
CAT - BEARING, SUCTION CASE	In Stock	
CAT - BELT, V IR 95100558	In Stock	
CAT - BOARD, CONTROL	In Stock	
CAT - BOARD, DIGITAL I/O	In Stock	
CAT - BOARD, I/O ANALOG	In Stock	
CAT - BOARD, MEASURING ABB	In Stock	
CAT - BOARD, POWER SYSTEM STABI	In Stock	
CAT - BRAKING JET ASSEMBLY - Control Valve	In Stock	
CAT - BREAKER, EXCITER ABB	In Stock	
CAT - BREAKERS BY BROWN BOVERI, 600V - spare field breaker in used spare exciter	In Stock	
CAT - Cartridge, Oil Seperator	In Stock	
CAT - COIL, CONTACTOR 130 V 84D418	In Stock	
CAT - COIL, SHUNT CLOSING	In Stock	
CAT - COIL, SHUNT OPENING	In Stock	
CAT - COLLAR, SAND	In Stock	
CAT - CONTACT, NORMAL LONG 700C	In Stock	
CAT - CONTACT, NORMAL SHORT 700	In Stock	
CAT - CONTACT, OVERLAP LONG 700	In Stock	
CAT - CONTACT, OVERLAP SHORT 70	In Stock	
CAT - CONTACT, ISOLATING	In Stock	
CAT - CONTROLLER, PLC DL05	In Stock	
CAT - Electronic Governor - BUSHING CABLE PROP VLV,	In Stock	
CAT - Electronic Governor - CONNECTOR, MLDT ROD BALL	In Stock	
CAT - Electronic Governor - CONVERTER, SERIAL/ETHERNET	In Stock	
CAT - Electronic Governor - Deflector Proportional	In Stock	
CAT - Electronic Governor - Guide Ball Slide	In Stock	
CAT - Electronic Governor - HOLDER, CIRCUIT BREAKER	In Stock	

Critical Spare Component	Stock Status	Comments
CAT - Electronic Governor - INTERFACE, ETHERNET VERSA	In Stock	
CAT - Electronic Governor - LVDT Deflector	In Stock	
CAT - Electronic Governor - MODULE, GE AMPLIFIER	In Stock	
CAT - Electronic Governor - MODULE, GE PT INTERFACE	In Stock	
CAT - Electronic Governor - MODULE, PLUG-IN DIODE	In Stock	
CAT - Electronic Governor - MODULE, VERSAMAX 16 PT	In Stock	
CAT - Electronic Governor - MODULE, VERSAMAX 32 PT	In Stock	
CAT - Electronic Governor - MODULE, VERSAMAX 4 AO	In Stock	
CAT - Electronic Governor - PC, Atlas 2	In Stock	
CAT - Electronic Governor - PC, ATLAS VX WORKS	In Stock	
CAT - Electronic Governor - Pos.Xducer	In Stock	
CAT - Electronic Governor - POS.Xducer	In Stock	
CAT - Electronic Governor - PROBE, SPEED ZVPU	In Stock	
CAT - Electronic Governor - RELAY, 14 PIN PLUG 24VDC	In Stock	
CAT - Electronic Governor - Rod Vdeflector	In Stock	
CAT - Electronic Governor - VERSAMAX Power Supply	In Stock	
CAT - Element, Air Filter	In Stock	
CAT - ELEMENT, AFTER FILTER	In Stock	
CAT - ELEMENT, AIR FILTER	In Stock	
CAT - ELEMENT, PRE FILTER	In Stock	
CAT - EXCITATION TRF	In Stock	
CAT - Exciter # 1 - BOARD POWER SYSTEM STABILIZER	In Stock	
CAT - Exciter # 1 - DIGITAL I/O BOARD	In Stock	
CAT - Exciter # 1 - Arc Chute	In Stock	
CAT - Exciter # 1 - BOARD MEASURING,	In Stock	
CAT - Exciter # 1 - Breaker	In Stock	
CAT - Exciter # 1 - COIL, SHUNT CLOSING	In Stock	
CAT - Exciter # 1 - COIL, SHUNT OPENING	In Stock	
CAT - Exciter # 1 - CONTACT, ISOLATING	In Stock	
CAT - Exciter # 1 - Control Board	In Stock	
CAT - Exciter # 1 - I/O ANALOG BOARD CONTROL	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 19 of 40

Critical Spare Component	Stock Status	Comments
CAT - Exciter # 1 - MODULE, THYRISTOR BRIDGE	In Stock	
CAT - Exciter # 1 - MOTOR, CHARGING	In Stock	
CAT - Exciter # 1 - PANEL, CONTROL	In Stock	
CAT - Exciter # 1 - SUPPLY, 110-220 VOLT	In Stock	
CAT - EXCITER NO. 2 - Analog Input Transducer	In Stock	
CAT - EXCITER NO. 2 - CARD ABB 1WX 174-2,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB HIER319619R2,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB KX9170A V1,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN 2010B-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0016A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0025A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0026A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0027A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0031A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN004A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0079A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0083A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0089A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0091A-P,CARD ABB UN0093A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0503A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0510C-9,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0516A,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0900B-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN0901B-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN1001C-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN1004A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UN1024C-P,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UNCO01D-E,	In Stock	
CAT - EXCITER NO. 2 - CARD ABB UNS0026A-P,	In Stock	
CAT - EXCITER NO. 2 - CARD BBC UN0077AP,	In Stock	
CAT - EXCITER NO. 2 - CARD BBC UN2001F-P	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 20 of 40

Critical Spare Component	Stock Status	Comments
CAT - EXCITER NO. 2 - CARD\ ABB UN0014B-P,	In Stock	
CAT - EXCITER NO. 2 - CARD\ ABB UN1004A-P,	In Stock	
CAT - EXCITER NO. 2 - COIL, 125 VOLT 60HZ	In Stock	
CAT - EXCITER NO. 2 - SHUNT CLOSING	In Stock	
CAT - EXCITER NO. 2 - CONTROL BOARD,	In Stock	
CAT - EXCITER NO. 2 - Field Voltage Transducer	In Stock	
CAT - EXCITER NO. 2 - Fuse 600Amp	In Stock	
CAT - EXCITER NO. 2 - Shunt Volttage Transducer	In Stock	
CAT - EXCITER NO. 2 - Thyristor	In Stock	
CAT - EXCITER NO. 2 - Transformer	In Stock	
CAT - EXCITER NO. 2 - Unitrol Card	In Stock	
CAT - Filter, Mat	In Stock	
CAT - Filter, Oil	In Stock	
CAT - FILTER, AIR INTAKE - 101T	In Stock	
CAT - FILTER, ELEMENT 10 MICRON	In Stock	
CAT - FLOAT - 2315	In Stock	
CAT - GASKET SET,IR 30423339	In Stock	Item #68001594
CAT - GENERATOR - Brake Ring	In Stock	Item #58608396
CAT - GENERATOR - Brake Solenoid	In Stock	Item #65300060
CAT - GENERATOR - Brake Valve	In Stock	Item #68001592
CAT - GENERATOR - INSLTR, SLIP RING	In Stock	Item #68001591
CAT - GENERATOR - MODULE, TYP 1CD 108 M 2-02 vibro-meter	In Stock	Item #60101058
CAT - GENERATOR - OVERCURRENT relay	In Stock	
CAT - GENERATOR - RELAY, TIME DELAY .6 - 1.0	In Stock	Item #58800486
CAT - GENERATOR - Rotating Ring	In Stock	Item #68001626
CAT - Generator Bearing - Cooler	In Stock	
CAT - Governor - JOINT, UNIVERSAL SSG #1787058	In Stock	
CAT - Governor Control System - CABLE DEFLECTOR FDBK AMP	In Stock	
CAT - Governor Control System - CABLE FEEDBACK 20'	In Stock	
CAT - Governor Control System - CABLE FEEDBACK 200'	In Stock	
CAT - Governor Control System - CABLE FEEDBACK 50'	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 21 of 40

Critical Spare Component	Stock Status	Comments
CAT - Governor Control System - CABLE PROPORTIONAL VLV	In Stock	
CAT - Governor Control System - CABLE, NEEDLE FDBK AMP,	In Stock	
CAT - Governor Control System - CABLE90 DEG.5' ZVPU,	In Stock	
CAT - Governor Control System - Power Supply	In Stock	
CAT - Governor Control System - Power Supply 24V	In Stock	
CAT - Governor Hydraulics - Cooler	In Stock	
CAT - Governor Hydraulics - Deflector Valve	In Stock	
CAT - Governor Hydraulics - DEFLECTOR, SERVOMOTOR	In Stock	
CAT - Governor Hydraulics - ELEMENT, FILTER SM 10	In Stock	
CAT - Governor Hydraulics - ELEMENT, FILTER SM 25	In Stock	
CAT - Governor Hydraulics - OIL, TURBINE 46 (205L)	In Stock	
CAT - Governor Hydraulics - Piston Seal 725X8 X3/8	In Stock	
CAT - Governor Hydraulics - Piston Seal 9X8X1,2	In Stock	
CAT - Governor Hydraulics - PLUG, C/V 010168-390-163	In Stock	
CAT - Governor Hydraulics - PLUG, C/V 021002-281-208	In Stock	
CAT - Governor Hydraulics - PLUG, ESCHER WYSS	In Stock	
CAT - Governor Hydraulics - Pressure Switch	In Stock	
CAT - Governor Hydraulics - Seal	In Stock	
CAT - Governor Pumps - INSERT, CURVED JAW SPIDER	In Stock	
CAT - Governor Pumps - Pump	In Stock	
CAT - Guide Bearing Segments - Bearing	In Stock	
CAT - Isolated Phase Bus - PT Fuse	In Stock	
CAT - MODULE, THYRISTOR BRIDGE	In Stock	
CAT - MODULE, THYRISTOR BRIDGE	In Stock	
CAT - MOTOR, CHARGING	In Stock	
CAT - NEEDLE VALVE ASS (6) - Amplifier/Proportional	In Stock	
CAT - NEEDLE VALVE ASS (6) - BUSHING NOZZLE 374527007/P001	In Stock	
CAT - NEEDLE VALVE ASS (6) - CABLE AIRCRAFT 20,	In Stock	
CAT - NEEDLE VALVE ASS (6) - CABLE AIRCRAFT,	In Stock	
CAT - NEEDLE VALVE ASS (6) - Casing Guide D/S	In Stock	
CAT - NEEDLE VALVE ASS (6) - Casing Guide U/S	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 22 of 40

Critical Spare Component	Stock Status	Comments
CAT - NEEDLE VALVE ASS (6) - CHAIN, DBS FCS-A1-15	In Stock	
CAT - NEEDLE VALVE ASS (6) - CONNECTOR, MINIATURE CHAIN	In Stock	
CAT - NEEDLE VALVE ASS (6) - CONNECTOR, MINIATURE CHAIN	In Stock	
CAT - NEEDLE VALVE ASS (6) - CONTROL DEVICE, NEEDLE	In Stock	
CAT - NEEDLE VALVE ASS (6) - Needle Seat	In Stock	
CAT - NEEDLE VALVE ASS (6) - Seal	In Stock	
CAT - NEEDLE VALVE ASS (6) - Seal Piston Ring	In Stock	
CAT - NEEDLE VALVE ASS (6) - Shuttle Valve	In Stock	
CAT - NEEDLE VALVE ASS (6) - Tip	In Stock	
CAT - Oil, Cooling Compressor	In Stock	
CAT - OIL, TURBINE 46 (205L)	In Stock	
CAT - OPERATOR, WORM GEAR 8"	In Stock	
CAT - O-RING, NOZZLE M868 X 4	In Stock	
CAT - PANEL, CONTROL	In Stock	
CAT - PISTON/PIN ASSY, IR 30215222	In Stock	
CAT - PISTON/PIN ASSY, IR 30215438	In Stock	
CAT - PISTON/PIN ASSY, IR 30292460	In Stock	
CAT - POWER SUPPLY, 110-220 VOLT	In Stock	
CAT - POWER TUNNEL (ROCKCUT) - Seal, Adit Door	In Stock	
CAT - RECTIFIER, BRIDGE 250JB6L-8338	In Stock	
CAT - RECTIFIER, BRIDGE 35MB60A-8419	In Stock	
CAT - RECTIFIER, BRIDGE 35MB60A-8421	In Stock	
CAT - RELAY, ASEA RXSF1, RK271 0	In Stock	
CAT - RING SET, IR 32194144	In Stock	
CAT - RING SET, IR 32194276	In Stock	
CAT - RING SET, IR 37138146	In Stock	
CAT - RING/GASKET KIT, IR 32133969	In Stock	
CAT - Rotating Ring	In Stock	
CAT - Rotating Ring	In Stock	
CAT - Rotating Ring	In Stock	
CAT - ROTOR - GENERATOR - Pole	In Stock	

Critical Spare Component	Stock Status	Comments
CAT - Rotor Poles - Entire Pole	In Stock	
CAT - SEAL, OIL IR 32204562	In Stock	
CAT - SEAL, SPHERICAL VALVE	In Stock	
CAT - SEAL, SPHERICAL VALVE	In Stock	
CAT - Slipring/Brush Rigging Assembly - Brush Holder	In Stock	
CAT - Slipring/Brush Rigging Assembly - Brushes	In Stock	
CAT - Slipring/brush Rigging Assembly - Insulator	In Stock	
CAT - Slipring/brush Rigging Assembly - Ring, Collector Assembly	In Stock	
CAT - STATION SERVICE SYSTEM - Arc Chute	In Stock	
CAT - STATION SERVICE SYSTEM - COIL, CLOSING 129 V DC	In Stock	
CAT - STATION SERVICE SYSTEM - Contact 1600Amp	In Stock	
CAT - STATION SERVICE SYSTEM - Contact Mowing Arc	In Stock	
CAT - STATION SERVICE SYSTEM - Contat Stationary Arc	In Stock	
CAT - STATION SERVICE SYSTEM - CT 400-800	In Stock	
CAT - STATION SERVICE SYSTEM - CT 800-1600	In Stock	
CAT - STATION SERVICE SYSTEM - Main Drawout Contact	In Stock	
CAT - STATION SERVICE SYSTEM - Trip Coil	In Stock	
CAT - STATION SERVICE SYSTEM - Undervoltage Coil	In Stock	
CAT - Stator Assembly - BAR STATOR BOTTOM,	In Stock	
CAT - Stator Assembly - BAR STATOR TOP,	In Stock	
CAT - Stator Assembly - CAP STATOR WINDING END,	In Stock	
CAT - Stator Assembly - Connector	In Stock	
CAT - Stator Assembly - JUMPER, STATOR ASM 105	In Stock	
CAT - Stator Assembly - JUMPER, STATOR ASM 107	In Stock	
CAT - Stator Assembly - JUMPER, STATOR ASM 108	In Stock	
CAT - Stator Assembly - JUMPER, STATOR ASM 109	In Stock	
CAT - Stator Assembly - JUMPER, STATOR WINDING	In Stock	
CAT - Stator Assembly - JUMPER, STATOR WINDING	In Stock	
CAT - Stator Assembly - JUMPER, STATOR WINDING	In Stock	
CAT - Stator Assembly - Slider	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 24 of 40

Critical Spare Component	Stock Status	Comments
CAT - Stator Assembly - Slider	In Stock	
CAT - Stator Assembly - Slider	In Stock	
CAT - Stator Assembly - Wedge	In Stock	
CAT - Stator Assembly - Wedge	In Stock	
CAT - Stator Windings - JUMPER, STATOR ASM 105	In Stock	
CAT - Stator Windings - JUMPER, STATOR ASM 107	In Stock	
CAT - Stator Windings - JUMPER, STATOR ASM 108	In Stock	
CAT - Stator Windings - JUMPER, STATOR ASM 109	In Stock	
CAT - Stator Windings - JUMPER, STATOR WINDING	In Stock	
CAT - Stator Windings - JUMPER, STATOR WINDING	In Stock	
CAT - Stator Windings - JUMPER, STATOR WINDING	In Stock	
CAT - SURFACE AIR COOLERS - Surface Air Cooler	In Stock	
CAT - SWITCH, DIFFERENTIAL PRES	In Stock	
CAT - TEXT DISPLAY, AIR DRYER	In Stock	
CAT - THRUST BEARING - Thrust Pads	In Stock	
CAT - Thrust Bearing Segements - Segments	In Stock	
CAT - Thrust Pads	In Stock	
CAT - THYRISTOR, ABB CS411-20	In Stock	
CAT - Turbine - Runner	In Stock	
CAT - Turbine Guide Bearing - Bearing	In Stock	
CAT - VALVE ASSEMBLY 35 GA	In Stock	
CAT - VALVE ASSEMBLY 55 GA	In Stock	
CAT - VALVE/GASKET KIT, IR 32133951	In Stock	
CAT - Minimal Pressure Valve	In Stock	
CAT - Turbine Bearing Cooler	In Stock	
EBBE - GEAR, HANDWHEEL	In Stock	
EBBE - GEAR, HELICAL SET	In Stock	
EBBE - GEAR, WORM 16:1 RATIO	In Stock	
EBBE - LINK, DECLUTCH	In Stock	
EBBE - PIN, FORK PIVOT	In Stock	
GCL - Bar, Stator Bottom	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 25 of 40

Critical Spare Component	Stock Status	Comments
GCL - Bar, Stator Top	In Stock	
GCL - Base, Smoke Detector	In Stock	
GCL - Bearing, Guide GE	In Stock	
GCL - Bearing, Pivoted Guide	In Stock	
GCL - Bearing, Pivoted Guide GE	In Stock	
GCL - Bearing, Thrust	In Stock	
GCL - Bearing, Thrust	In Stock	
GCL - Bell, Fire Alarm 10"	In Stock	
GCL - BELT SET, V (4 PC)	In Stock	
GCL - BELT SET, V (4 PC)	In Stock	
GCL - BELT SET, V (4 PC)	In Stock	
GCL - Breaker, Volt Autom	In Stock	
GCL - Breaker, Volt Automatic	In Stock	
GCL - Brush, Carb Metric	In Stock	
GCL - Bushing, Bottom Shaft	In Stock	
GCL - Bushing, HV ABB TO25W0412AT	In Stock	
GCL - Bushing, Packing Gland	In Stock	
GCL - Card Measuring SDCS-Pin51	In Stock	
GCL - Card, Analog I/O	In Stock	
GCL - Card, Digital I/O ABB	In Stock	
GCL - Card, EXT I/O ABB	In Stock	
GCL - Contactor, AE LINE 125VDC	In Stock	
GCL - Control Board, SDCS-CON-2	In Stock	
GCL - Detector, heat 135F	In Stock	
GCL - Detector, Heat 281B-PL	In Stock	
GCL - Detector, Smoke EC30DU-3	In Stock	
GCL - Device, Surge Suppression	In Stock	
GCL - ETH Card	In Stock	
GCL - Excitation Transformer	In Stock	
GCL - Fan, Cooling 27" ABB	In Stock	
GCL - FILTER, AIR CARTRIDGE	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 26 of 40

Critical Spare Component	Stock Status	Comments
GCL - FILTER, AIR CARTRIDGE	In Stock	
GCL - FILTER, AIR CARTRIDGE	In Stock	
GCL - FILTER, ELEMENT	In Stock	
GCL - FILTER, ELEMENT	In Stock	
GCL - FILTER, INLINE	In Stock	
GCL - FILTER, INLINE	In Stock	
GCL - FILTER, INLINE	In Stock	
GCL - FILTER, INLINE	In Stock	
GCL - FILTER, INLINE	In Stock	
GCL - FILTER, MAT	In Stock	
GCL - FILTER, MAT	In Stock	
GCL - FILTER, MAT	In Stock	
GCL - FILTER, OIL KAESER	In Stock	
GCL - FILTER, OIL KAESER	In Stock	
GCL - FILTER, OIL KAESER	In Stock	
GCL - Fuse, 1250A 690V 170M6166	In Stock	
GCL - Gas, Inergen (350F3)	In Stock	
GCL - Gas, Inergen (425F3)	In Stock	
GCL - Generator - Bottom Stator Bars (18)	In Stock	
GCL - Generator - Converter, RTD Temperature	In Stock	
GCL - Generator - Converter, RTD Universal	In Stock	
GCL - Generator - Creep Detector ASSY, 129 V	In Stock	
GCL - Generator - Device, Surge Suppression	In Stock	
GCL - Generator - Fuse, TEMP Limiter	In Stock	
GCL - Generator - Fuse, Voltage XFM/R	In Stock	
GCL - Generator - Guide Bearing, GE	In Stock	
GCL - Generator - Jumper Pole ASM #2	In Stock	
GCL - Generator - Jumper Pole ASM #3	In Stock	
GCL - Generator - Jumper Pole ASM #4	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 27 of 40

Critical Spare Component	Stock Status	Comments
GCL - Generator - Jumper, Pole ASM #1	In Stock	
GCL - Generator - Level, Indicator Magnetic	In Stock	
GCL - Generator - Oil, Turbine 46 (205L)	In Stock	
GCL - Generator - Packing, V-Type GE	In Stock	
GCL - Generator - Pin, Taper 25MM x 90MM	In Stock	
GCL - Generator - Plate, Brake GE	In Stock	
GCL - Generator - Plate, Locating Pivoted	In Stock	
GCL - Generator - Pole, Wound GE	In Stock	
GCL - Generator - Probe, 741 GE	In Stock	
GCL - Generator - RTD, 12.5" -50-550 DEG	In Stock	
GCL - Generator - RTD, 17" -50-550 DEG C	In Stock	
GCL - Generator - Top Stator Bars (36)	In Stock	
GCL - Governor Control System - POWER SUPPLY, 18-32VDC	In Stock	
GCL - Governor Control System - Pressure Switch	In Stock	
GCL - Governor Control System - TRANSMITTER, PRESS 0-2000	In Stock	
GCL - Governor Control System - TRANSMITTER, TEMP 4-20 MA	In Stock	
GCL - Governor Hydraulic System - Filter, Element NS-7	In Stock	
GCL - Governor Hydraulic System - Joint, Shaft Parker	In Stock	
GCL - Governor Hydraulic System - Pump, Vane Vick	In Stock	
GCL - Governor Hydraulic System - Seal, Polypak "U" Cup	In Stock	
GCL - Governor Hydraulic System - Valve, Check 1 6000 psi	In Stock	
GCL - Governor Hydraulic System - Valve, Proportional	In Stock	
GCL - Governor Hydraulic System - Valve, Relief	In Stock	
GCL - Holder, Brush Metric	In Stock	
GCL - Inflatable Seal	In Stock	
GCL - Jumper, Pole ASM #1	In Stock	
GCL - Jumper, Pole ASM #2	In Stock	
GCL - Jumper, Pole ASM #3	In Stock	
GCL - Jumper, Pole ASM #4	In Stock	
GCL - Key, Pole Driven	In Stock	
GCL - Key, Pole Stationary	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 28 of 40

Critical Spare Component	Stock Status	Comments
GCL - Locating Plate, Pivoted	In Stock	
GCL - LVDT	In Stock	
GCL - Measuring Board ABB	In Stock	
GCL - Media Converter	In Stock	
GCL - MLDT	In Stock	
GCL - Module, Control Relay	In Stock	
GCL - Module, Serial processor	In Stock	
GCL - Nut, Hex M30X3.5-6H	In Stock	
GCL - Oil, Turbine 46 (205 L)	In Stock	
GCL - Operating Ring - BUSHING,GE 226043126X015	In Stock	
GCL - Operating Ring - Washer, Ring Seal	In Stock	
GCL - Panel, Service UNS 0874A-P	In Stock	
GCL - PIN,TAPER 25MM X 90MM	In Stock	
GCL - Pole, Wound GE	In Stock	
GCL - Power Supply, SDCS-POWL	In Stock	
GCL - PowerSupply, UNS0868A-P	In Stock	
GCL - Probe, 741 GE	In Stock	
GCL - Pump, Vane Vick	In Stock	
GCL - Relay, Low Voltage	In Stock	
GCL - Relay, Overload	In Stock	
GCL - Relay, Overload 0.32-1.0A	In Stock	
GCL - Relay, Overload 1.6-5.0A	In Stock	
GCL - Relay, Overload 3.7-12A	In Stock	
GCL - RELAY, 11 PIN 24V	In Stock	
GCL - RELAY, 110-125V	In Stock	
GCL - RELAY, 110-125V ABB	In Stock	
GCL - RELAY, 110-125VDC	In Stock	
GCL - RELAY, 120V 10A DPDT	In Stock	
GCL - RELAY, 14 PIN 110/120 VAC	In Stock	
GCL - RELAY, 8 PIN 110/120VAC(S)	In Stock	
GCL - RELAY, 8 PIN 120V AC/DC	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 29 of 40

Critical Spare Component	Stock Status	Comments
GCL - RELAY, 8 PIN DPDT	In Stock	
GCL - RELAY, ANTI-PUMP	In Stock	
GCL - RELAY, AUX 48VDC	In Stock	
GCL - RELAY, BREAKER FAIL	In Stock	
GCL - RELAY, BUSHHOLZ 250V 2AMP	In Stock	
GCL - RELAY, CONTROL 120V 60HZ	In Stock	
GCL - RELAY, CONTROL 120V 60HZ	In Stock	
GCL - RELAY, CONTROL 120V 60HZ	In Stock	
GCL - RELAY, CONTROL 125VDC	In Stock	
GCL - RELAY, CONTROL 24VDC	In Stock	
GCL - RELAY, FAST TRIPPING 125V	In Stock	
GCL - RELAY, INTERPOSING	In Stock	
GCL - RELAY, LOCKOUT 125V	In Stock	
GCL - RELAY, LOCKOUT 125V	In Stock	
GCL - RELAY, OVERCURRENT	In Stock	
GCL - RELAY, OVERLOAD	In Stock	
GCL - RELAY, OVERLOAD CH C306DN3B	In Stock	
GCL - RELAY, PLUG-IN 14 PIN	In Stock	
GCL - RELAY, PLUG-IN 14 PIN DC	In Stock	
GCL - RELAY, PUSHBUTTON 110V	In Stock	
GCL - RELAY, PUSHBUTTON 125V	In Stock	
GCL - RELAY, RESIDUAL	In Stock	
GCL - RELAY, THERMISTOR 110V	In Stock	
GCL - RELAY, TIME 24-230V AC/DC	In Stock	
GCL - RELAY, TIME TYPE SGDM-1	In Stock	
GCL - RELAY, TRIP CIRCUIT	In Stock	
GCL - RELAY, VOLTAGE UNBALANCE	In Stock	
GCL - Ring Assembly, Collector	In Stock	
GCL - Ring Assy, Collector	In Stock	
GCL - Ring, Rotating GE	In Stock	
GCL - Ring, Sealing C/W Spring	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 30 of 40

Critical Spare Component	Stock Status	Comments
GCL - RTD, 12.5" -50-550 Deg	In Stock	
GCL - RTD, 12.5" -50-550 Deg	In Stock	
GCL - RTD, 17" -50-550 Deg C	In Stock	
GCL - RTD, 17" -50-550 Deg C	In Stock	
GCL - Runner - Seal, 770mm x 730mm x 25mm	In Stock	
GCL - SCREW, CAP M30X3.5-6GX130MM	In Stock	
GCL - Seal, Top Guide Bearing	In Stock	
GCL - Servomotor - Rod, Seal H092-730	In Stock	
GCL - Servomotor - Rod, Seal H254-918	In Stock	
GCL - Servomotor Assembly - Ring, Piston GE	In Stock	
GCL - Shim, GE 007	In Stock	
GCL - Shim, GE 008	In Stock	
GCL - Shoe, Brake GE 6201B6815L005	In Stock	
GCL - Sleeve, Shaft	In Stock	
GCL - SOCKET, RELAY 14 PIN 5A	In Stock	
GCL - SOCKET, RELAY 8 PIN 7A	In Stock	
GCL - Speed Signal Generator - Pickup, Zero Velocity	In Stock	
GCL - Spring Assy, Thrust	In Stock	
GCL - Spring, GE	In Stock	
GCL - Spring, GE	In Stock	
GCL - Stick, Joint Horz	In Stock	
GCL - Stick, Joint Vert	In Stock	
GCL - Surface Air Coolers - Cooler, Surface Air	In Stock	
GCL - Switch, 20-160 ABB 104-324-46	In Stock	
GCL - Switch, Press 200 PSI 15A	In Stock	
GCL - Switch, Press Actuated	In Stock	
GCL - Switch, Press Gran 20W	In Stock	
GCL - Synchronizer	In Stock	
GCL - Thermometer, ADJ 0-55	In Stock	
GCL - THRISTOR, 5STP18F1800 V11	In Stock	
GCL - Thrust/Guide Bearing Coolers - Coil, Cooling GE	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 31 of 40

Critical Spare Component	Stock Status	Comments
GCL - Transducer, Balluff Track	In Stock	
GCL - TRANSMITTER, FRAZIL ICE	In Stock	
GCL - Transmitter, PFM	In Stock	
GCL - Transmitter, Temp 4-20 MA	In Stock	
GCL - TRANSMITTER, WATER LEVEL	In Stock	
GCL - Turbine Assembly - Packing Ring, Segment	In Stock	
GCL - Turbine Assembly - Pad, Stop GE	In Stock	
GCL - Turbine Assembly - Ring, Rotating GE	In Stock	
GCL - Turbine Assembly - Ring, Sealing C/W Spring	In Stock	
GCL - Turbine Assembly - Ring, Wear	In Stock	
GCL - Turbine Assembly - Seal, Inflatable	In Stock	
GCL - Turbine Assembly - Transmitter, Diff Pressure	In Stock	
GCL - Turbine Assembly - Transmitter, Pressure 0-90 PSIG	In Stock	
GCL - Turbine Assembly - Transmitter, Pressure -5TO55	In Stock	
GCL - Turbine Assembly - Transmitter, Pressure GE	In Stock	
GCL - Turbine Assembly - Valve, Check Wafer 12"D	In Stock	
GCL - VALVE, CHECK PRESSURE	In Stock	
GCL - VALVE, CHECK PRESSURE	In Stock	
GCL - VALVE, CHECK PRESSURE	In Stock	
GCL - Valve, Purge GE	In Stock	
GCL - VALVE, INLET MAIN KIT	In Stock	
GCL - VALVE, INLET MAIN KIT	In Stock	
GCL - VALVE, INLET MAIN KIT	In Stock	
GCL - VALVE, PURGE GE	In Stock	
GCL - Washer, Brake Plate	In Stock	
GCL - Washer, GE 105000100	In Stock	
GCL - Wicket Gates - Bushing, GE 226043126X015	In Stock	
GCL - Wicket Gates - Gate, Wicket GE	In Stock	
GCL - Wicket Gates - Level, Gate GE	In Stock	
GCL - Wicket Gates - Lever, Shear GE	In Stock	
GCL - Wicket Gates - Liner, Gate Operating	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 32 of 40

Critical Spare Component	Stock Status	Comments
GCL - Wicket Gates - Link, GE	In Stock	
GCL - Wicket Gates - Pin, Eccentric	In Stock	
GCL - Wicket Gates - Pin, Shear GE	In Stock	
GCL - Wicket Gates - Pin, Taper GE	In Stock	
GCL - Wicket Gates - Plate, Retaining GE	In Stock	
GCL - Wicket Gates - Plate, Top GE	In Stock	
GCL - Wicket Gates - Shim, Laminum	In Stock	
GCL - Wicket Gates - Sleeve, BRS 210mm	In Stock	
GCL - Wicket Gates - Spacer	In Stock	
GCL - XFMER, CT 15 kV	In Stock	
HLK - Accumulator Tank Solinoid Valve	In Stock	
HLK - ADAPTER, REMOTE I/O	In Stock	
HLK - Ampmeter	In Stock	
HLK - AUTO AIR CHARGING SOLND.	In Stock	
HLK - BACKPLANE, 10 SLOT MODICON	In Stock	
HLK - BEARING KIT,	In Stock	
HLK - BOARD, FIRING ES	In Stock	
HLK - BREAKER, 100 AMP 600 VOLT	In Stock	
HLK - BREAKER, 150A 600V	In Stock	
HLK - BREAKER, 225A 600V 3P	In Stock	
HLK - BREAKER, 600 VOLT 3 PHASE	In Stock	
HLK - BRIDGE, THYRISTOR EG	In Stock	
HLK - Card Battery Charger	In Stock	
HLK - Card Gate Pulse	In Stock	
HLK - CIRCUIT BREAKER - Anti-Pump Relay	In Stock	
HLK - CIRCUIT BREAKER - Charging Motor	In Stock	
HLK - CIRCUIT BREAKER - Motor Brush Kit	In Stock	
HLK - CIRCUIT BREAKER - Primary Disconnect	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 33 of 40

Critical Spare Component	Stock Status	Comments
HLK - CIRCUIT BREAKER - Shunt Trip Coil	In Stock	
HLK - CIRCUIT BREAKER - Spring Release Coil	In Stock	
HLK - COIL, AUTO AIR CHARGING SOLND.	In Stock	
HLK - CONTACT, AUX GE	In Stock	
HLK - CONTACTOR, FURNAS	In Stock	
HLK - Creep Detector	In Stock	
HLK - EXCITATION - Bridge (entire module)	In Stock	
HLK - EXCITER FIELD BREAKER - Entire Unit	In Stock	
HLK - GASKET KIT, COMPPAIR 45244	In Stock	
HLK - GASKET KIT, COMPPAIR 79452	In Stock	
HLK - GENERATOR - Brake Shoes	In Stock	
HLK - GENERATOR - Generator Air Valve	In Stock	
HLK - GENERATOR - SOLENOID, GENERATOR AIR VALVE,	In Stock	
HLK - GENERATOR CIRCUIT BREAKER	In Stock	
HLK - GOVERNOR ACCUMULATOR TANK - Air Admission Solenoid	In Stock	
HLK - GOVERNOR ACCUMULATOR TANK - Solenoid Valve	In Stock	
HLK - GOVERNOR ACCUMULATOR TANK - SWITCH PRESS OIL ALARM,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - COIL RESET SOLENOID,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - COIL OIL PUMP UNLOADER SOLND. ,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - COIL PARTIAL SHUTDOWN RESET ,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - COIL SHUTDOWN SOLENOID 65SD ,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - COILDASHPOT,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - Filter	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - GATE LIMIT, ROD,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - PUMP UNLOADER,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - UNLOADER PISTON,	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - WOODWARD 1447- 634, motor	In Stock	
HLK - GOVERNOR HYDRAULIC SYSTEM - WOODWARD 1447-640, MOTOR	In Stock	
HLK - GOVERNOR SPEED GENERATOR - Gear Drive	In Stock	
HLK - GOVERNOR SPEED GENERATOR - GEAR, WOODWARD 1447-640	In Stock	
HLK - GOVERNOR SPEED GENERATOR - Speed Switch Bracket	In Stock	

Critical Spare Component	Stock Status	Comments
HLK - GUIDE BEARING SEGMENTS (SET) - BEARING, SEGMENT	In Stock	
HLK - HD-1N - HINDS LAKE INTAKE - TRANSMITTER, PRESS 0-375	In Stock	
HLK - HEADCOVER ASSEMBLY - BUSHING 60X75 MM,	In Stock	
HLK - HEADCOVER ASSEMBLY - BUSHING GATE STEM - UPPER,	In Stock	
HLK - HEADCOVER ASSEMBLY - BUSHING GATE STEM - LOWER,	In Stock	
HLK - HEADCOVER ASSEMBLY - Bushing Upper	In Stock	
HLK - HEADCOVER ASSEMBLY - SEAL TURBINE,	In Stock	
HLK - HEADCOVER ASSEMBLY - SEALWICKET GATE,	In Stock	
HLK - IMPELLER, DEWATERING PUMP	In Stock	
HLK - IN FRAZIL ICE SYS - INTAKE - TRANSMITTER, TEMPERATURE	In Stock	
HLK - INSERT, COMPPAIR 38275	In Stock	
HLK - INTAKE HEADGATE AND HOIST EQUIP - Pressure druk	In Stock	
HLK - ISOLATED PHASE BUS - PT fuse	In Stock	
HLK - MECHANICAL GOVERNOR CONTROLS - Motor Limit	In Stock	
HLK - MECHANICAL GOVERNOR CONTROLS - Motor Speeder	In Stock	
HLK - MECHANICAL GOVERNOR CONTROLS - Unloader Timing Valve	In Stock	
HLK - METER, FLOW BARTON	In Stock	
HLK - MODULE, ANALOG QUANTUM	In Stock	
HLK - MODULE, CPU MODICON	In Stock	
HLK - MODULE, DISCRETE IN	In Stock	
HLK - MODULE, DISCRETE OUT	In Stock	
HLK - MODULE, ETHERNET QUANTUM	In Stock	
HLK - MODULE, GPS QUANTUM	In Stock	
HLK - MODULE, HOT STANDBY	In Stock	
HLK - MODULE, INTERFACE PLC	In Stock	
HLK - MODULE, RACK FILLER	In Stock	
HLK - MODULE, RELAY OUT	In Stock	
HLK - OPERATING RING - Bearing pads	In Stock	
HLK - PANEL, CONTROL SCP/CCP	In Stock	
HLK - PANEL, VOLTAGE ADJUSTER	In Stock	
HLK - PLATE, TERMINAL 3 POLE	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 35 of 40

Critical Spare Component	Stock Status	Comments
HLK - PLATE, TERMINAL 6 POLE	In Stock	
HLK - PMG Speed Switch Bracket	In Stock	
HLK - POWER DISTRIBUTOR, ASSY	In Stock	
HLK - POWER SUPPLY, 125-24 VDC	In Stock	
HLK - POWER SUPPLY, 125 VDC	In Stock	
HLK - POWER SUPPLY, 125V/DC 8A	In Stock	
HLK - POWER SUPPLY, 24 VDC	In Stock	
HLK - POWER SUPPLY, CP-C-24/10.	In Stock	
HLK - RECTIFYING TRANSFORMER	In Stock	
HLK - RELAY, CONTROL 120V 60HZ	In Stock	
HLK - RELAY, CONTROL 48V	In Stock	
HLK - RELAY, CONTROL AB 500F-A0D92	In Stock	
HLK - REMOTE I/O HEAD, MODICON	In Stock	
HLK - RING SET ASSY, COMPAIR 48	In Stock	
HLK - RING SET, COMPAIR 45237	In Stock	
HLK - RING SET, WORTH P04643-10	In Stock	
HLK - RING/GASKET KIT, IR 32133944	In Stock	
HLK - Rotor - Pole	In Stock	
HLK - Rotor Assembly - HLK Generator - Rotor pole	In Stock	
HLK - SEAL, COMPAIR 13254	In Stock	
HLK - SEAT/SEAL KIT, VALVE 1-1/	In Stock	
HLK - SERVOMOTOR #1 - servomotor repair kit	In Stock	
HLK - SERVOMOTOR ASSEMBLY - shear pins	In Stock	
HLK - Slip Ring	In Stock	
HLK - Slipring/Brush Rigging - Brush holder	In Stock	
HLK - Slipring/Brush Rigging - Carbon brush	In Stock	
HLK - SOLENOID, GENERATOR AIR VALVE	In Stock	
HLK - STATION SERVICE SWITCHGEAR - Breaker (EATON)	In Stock	
HLK - STATOR ASSEMBLY - Stator Bars	In Stock	
HLK - STATOR ASSEMBLY - Stator Connection Caps	In Stock	
HLK - STATOR WINDINGS - UNIT 1 - Robel Bars	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 36 of 40

Critical Spare Component	Stock Status	Comments
HLK - STM SERVICE TRANSFORMER (SST-1)	In Stock	
HLK - SURFACE AIR COOLERS	In Stock	
HLK - SWITCH, LIMIT AB 802T-ATP	In Stock	
HLK - SWITCH, LIMIT AB 802T-DTP	In Stock	
HLK - SWITCH, MERCOID TYPE C-4	In Stock	
HLK - SWITCH, PRESS OIL ALARM	In Stock	
HLK - THRUST BEARING SEGMENTS (SET) - Thrust Bearing Segments	In Stock	
HLK - THRUST PIN ASSY, IR 322218406	In Stock	
HLK - Thrust/Guide Bearing Coolers	In Stock	
HLK - Thrust/Guide Bearing Coolers - Hi pressure lift pump	In Stock	
HLK - TURBINE - BEARING SEGMENT TURBINE,	In Stock	
HLK - TURBINE - Carbon Seal,	In Stock	
HLK - TURBINE - Dowel	In Stock	
HLK - TURBINE - Eccentric Pin	In Stock	
HLK - TURBINE - Friction Hub	In Stock	
HLK - TURBINE - Friction Hub	In Stock	
HLK - TURBINE - Link Pin	In Stock	
HLK - TURBINE - Link Thick	In Stock	
HLK - TURBINE - Link Thin	In Stock	
HLK - TURBINE - Packing Box	In Stock	
HLK - TURBINE - PLATE BEARING,	In Stock	
HLK - TURBINE - SEAL TURBINE,	In Stock	
HLK - TURBINE - Wicket Gate Lever	In Stock	
HLK - TURBINE - Wicket Gate Seal	In Stock	
HLK - TURBINE GUIDE BEARING - BEARING, Segment TURBINE	In Stock	
HLK - UPPER GUIDE BEARING COOLER	In Stock	
HLK - UPPER GUIDE BEARING SEGMENTS - Upper Guide Bearing Segments	In Stock	
HLK - VALVE & SPRING SET, 45245	In Stock	
HLK - VALVE ASSEMBLY 55 GA	In Stock	
HLK - VALVE ASSY, COMPART 47935	In Stock	
HLK - VALVE ASSY, COMPART 47936	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 37 of 40

Critical Spare Component	Stock Status	Comments
HLK - VALVE ASSY, COMPAIR 48141	In Stock	
HLK - VALVE ASSY, COMPAIR 50681	In Stock	
HLK - VALVE, SOL 4-WAY SKINNER	In Stock	
HLK - VALVE/GASKET KIT, IR 32133936	In Stock	
HLK - VOLTAGE ADJUSTER	In Stock	
HLK - WICKET GATES - Wicket Gate	In Stock	
HLK - XFMR, PT 600VOLT 3 PHASE	In Stock	
HLK- Turbine Bearing Cooler	In Stock	
PRV - Bearing, Lower Guide	In Stock	
PRV - Bearing, Upper Guide	In Stock	
PRV - Bearing, Upper Thrust	In Stock	
PRV - BLOCK POWERTRAC, 115VAC/1	In Stock	
PRV - Circuit Breaker	In Stock	
PRV - COIL, GE 22-115-045-01	In Stock	
PRV - CONTACTOR, FIELD FLASHING	In Stock	
PRV - DIODE, GE 4001A1158JA	In Stock	
PRV - DIODE, GE 4001A1158IB	In Stock	
PRV - DIODE, GE 6RT44UV698-8841	In Stock	
PRV - MAGNETROL, D-B10-1GBA-ABM	In Stock	
PRV - METER, FLOW OMEGA FL-6318B	In Stock	
PRV - METER, FLOW WATER 1000#	In Stock	
PRV - MOTOR, GOVERNOR PUMP	In Stock	
PRV - Pad, Guide Bearing	In Stock	
PRV - PLC CPU Module	In Stock	
PRV - PLC Ethernet Module	In Stock	
PRV - PLC Power Supply	In Stock	
PRV - PUMP, PH PVP1630-R212	In Stock	
PRV - TACHOMETER, TAK PAK 3	In Stock	
USL - BEARING, BOWL - Drainage	In Stock	
USL - BEARING, BOWL - Unwatering	In Stock	
USL - BEARING, BIG END COMP #E02128	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 38 of 40

Critical Spare Component	Stock Status	Comments
USL - BEARING, BIG END COMP #E02128	In Stock	
USL - BEARING, COMPPAIR E05519	In Stock	
USL - BEARING, COMPPAIR E05519	In Stock	
USL - BEARING, MAIN D/E	In Stock	
USL - BEARING, MAIN D/E	In Stock	
USL - BEARING, MAIN O/E	In Stock	
USL - BEARING, MAIN O/E	In Stock	
USL - BEARING, PACKING CONTAINER	In Stock	
USL - BELT, DRIVE COMPPAIR 3VX850	In Stock	
USL - BELT, DRIVE COMPPAIR 3VX850	In Stock	
USL - BELT, V 3V950	In Stock	
USL - BELT, V 3V950	In Stock	
USL - BRIDGE, THYRISTOR EG	In Stock	
USL - BUSHING, IMPELLER TAPERLOCK	In Stock	
USL - BUSHING, SIDE ROLLER	In Stock	
USL - BUSHING, SMALL END COM#LE02130	In Stock	
USL - BUSHING, SMALL END COM#LE02130	In Stock	
USL - BUSHING, WHEEL	In Stock	
USL - COIL, SULL 250018-971	In Stock	
USL - CROWBAR, ES	In Stock	
USL - FILTER, COOLANT (ELEMENT ONLY)	In Stock	
USL - GASKET KIT, IR X1453T47	In Stock	
USL - GASKET, COMPPAIR E05516	In Stock	
USL - GASKET, COMPPAIR E05516	In Stock	
USL - GASKET, COMPPAIR J201671	In Stock	
USL - GASKET, COMPPAIR J201671	In Stock	
USL - GASKET, FLEXMASTER 250007-559	In Stock	
USL - GASKET, SULL 040517	In Stock	
USL - Governor Pump	In Stock	
USL - HEATER, GAIN 3.2 KW 575 V	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
 Page 39 of 40

Critical Spare Component	Stock Status	Comments
USL - HEATER, GATE (DUCT BLOWE	In Stock	
USL - HEATER, SHEAVE BLOCK 1366 W	In Stock	
USL - JOINT KIT, COMPART 98504/1172	In Stock	
USL - JOINT KIT, COMPART 98504/1172	In Stock	
USL - JOINT, COMPART C202284	In Stock	
USL - JOINT, COMPART C202284	In Stock	
USL - JOINT, COMPART C202285	In Stock	
USL - JOINT, COMPART C202285	In Stock	
USL - JOINT, COMPART C202285-100	In Stock	
USL - JOINT, COMPART C202285-100	In Stock	
USL - JOINT, COMPART C202286	In Stock	
USL - JOINT, COMPART C202287	In Stock	
USL - JOINT, COMPART C202287	In Stock	
USL - POWER DISTRIBUTOR, ASSY	In Stock	
USL - REGULATOR KIT, SULL 250019-453	In Stock	
USL - RING KIT, COMPART 98477/1131	In Stock	
USL - RING KIT, COMPART 98477/1131	In Stock	
USL - RING, PISTON 1ST STAGE	In Stock	
USL - RING, PISTON 1ST STAGE	In Stock	
USL - SEAL, FLAT 22' LENGTH	In Stock	
USL - SEAL, J 22' LENGTH	In Stock	
USL - SWITCH, OIL LEVEL	In Stock	
USL - TRANSMITTER, PRESS 0-2.5MH20	In Stock	
USL - VALVE, REED 1ST STAGE	In Stock	
USL - VALVE, REED 1ST STAGE	In Stock	
USL - VALVE, REED 2ND STAGE	In Stock	
USL - VALVE, REED 2ND STAGE	In Stock	

2020–2021 Winter Readiness Planning Report
Appendix G: Critical Spares Status Listing - Hydraulic Generation
Page 40 of 40

Critical Spare Component	Stock Status	Comments
USL - VARISTOR, EXCITER	In Stock	
USL- Governor Pump	In Stock	
USL- Rotor Rim Drive Keys	In Stock	
CAT - Potential Transformer	Not In Stock	On Order - Delivery by November 30, 2020
GCL - Potential Transformer	Not In Stock	On Order - Delivery by November 30, 2020



Appendix H

Holyrood Supplemental Capital Projects – Monthly Update

Holyrood Supplemental Capital Projects – Monthly Update

On April 7, 2020, Newfoundland and Labrador Hydro (“Hydro”) filed its application for approval of capital projects necessary for the continued operation of the Holyrood Thermal Generating Station (“Holyrood TGS”). The application was approved on May 11, 2020 in Board Order P.U. 14(2020). In that Order, the Board directed Hydro to file monthly updates on the status of the approved capital projects from June to September 2020 and, thereafter, to provide updates as part of the Winter Readiness reports filed in October, November, and December of 2020.

Projects Overview

Four projects were approved in Board Order P.U. 14(2020):

- **Boiler Condition Assessment and Miscellaneous Upgrades:** Scope involves Level 2 condition assessments on internal components of the main steam generators (boilers) and associated external high energy piping to identify required refurbishment or replacement work. Hydro will also replace or refurbish components that are identified as requiring immediate intervention. This project also includes the completion of required miscellaneous upgrades of condition based deficiencies identified in the 2019 Condition Assessment and Miscellaneous Upgrades project.
- **Overhaul Unit 2 Turbine Valves:** Scope includes the total disassembly, detailed internal inspection, refurbishment, and reassembly of all major steam valves. Valve refurbishment includes replacement of any identified damaged components.
- **Overhaul Unit 3 Boiler Feed Pump West:** Scope includes disassembly, inspection, reassembly, and re-commissioning of the pump. During overhaul, parts, including the volute impeller cartridge, are replaced as necessary.
- **Overhaul Unit 2 Generator:** Scope includes disassembly of generator end shields, hydrogen seals, hydrogen coolers, and bearings; removal of the generator rotor from the stator; cleaning of internal components; detailed visual inspection and non-destructive evaluation of internal components; detailed measurement of clearances and alignments; mechanical integrity testing of windings and core wedges; and replacement or refurbishment of components found to be damaged.

Status Update

Project schedules and cost updates for the four projects are provided in Tables 1 - 4. All projects remain on schedule and on budget with the exception of the Unit 2 Generator Overhaul which is expected to be slightly over budget.¹ Hydro continues to manage the required work and planned outage schedules with an aim to achieving project completion prior to the 2020–2021 winter season. At the time of this monthly update, there are no significant execution risks or concerns.

Status of Units:

- Unit 1 planned maintenance outage is complete. Start-up commenced on August 25, 2020 and the unit was placed online on September 1, 2020 and has been in cold standby since that time. Preparations are currently underway to bring Unit 1 online.
- Unit 2 is currently on its planned annual maintenance outage.
- Unit 3 planned maintenance outage is complete and the unit is operating in synchronous condenser mode.

¹ Attributed to additional work identified during execution (e.g., epoxy repair of stator winding end cap, re-babbing of generator bearings, and additional time required to realign the generator following reassembly).

2020–2021 Winter Readiness Planning Report
Appendix H: Holyrood Supplemental Capital Projects – Monthly Update
Page 2 of 4

Table 1: Project Status – Boiler Condition Assessment and Miscellaneous Upgrades

Approved Budget:	3,056.7			
Total Project YTD (\$000)	2,413.0			
Total Project Forecast (\$000)	3,056.7			
Major Milestones	Start Date	End Date	Status	Overall Project Update
Unit 3 Inspections	15-May-20	12-Jun-20	Complete	<ul style="list-style-type: none"> Unit 3: No major findings requiring immediate attention were discovered during the Level 2 Condition Assessment. <p>All work identified during the previous Level 2 Condition Assessment was completed in accordance with industry quality standards.</p>
Unit 3 Refurbishments	15-May-20	12-Jun-20	Complete	
Unit 3 Major Findings	N/A	N/A	Complete	<ul style="list-style-type: none"> Unit 1: No major findings requiring immediate attention were discovered during the Level 2 Condition Assessment. <p>All work identified during the previous Level 2 Condition Assessment was completed in accordance with industry quality standards.</p>
Unit 1 Inspections	15-Jun-20	21-Aug-20	Complete	
Unit 1 Refurbishments	15-Jun-20	21-Aug-20	Complete	<ul style="list-style-type: none"> Unit 2: No major findings requiring immediate attention were discovered during the Level 2 Condition Assessment. <p>All work identified during the previous Level 2 Condition Assessment was completed in accordance with industry quality standards.</p>
Unit 1 Major Findings	N/A	N/A	Complete	
Unit 2 Inspections	24-Aug-20	2-Oct-20	Complete	<ul style="list-style-type: none"> Condition Assessment Report: The condition assessment report will be finalized after all on site work has been completed.
Unit 2 Refurbishments	24-Aug-20	2-Oct-20	Complete	<ul style="list-style-type: none"> Expected to be completed on budget.
Unit 2 Major Findings	N/A	N/A	Complete	
Condition Assessment Report	Jun-20	31-Dec-20	In progress	

2020–2021 Winter Readiness Planning Report
Appendix H: Holyrood Supplemental Capital Projects – Monthly Update
Page 3 of 4

Table 2: Project Status – Overhaul Unit 2 Turbine Valves

Approved Budget:	2,919.5		
Total Project YTD (\$000)	2,181.0		
Total Project Forecast (\$000)	2,919.5		
Major Milestones	Start Date	End Date	Status
Control Valves Disassembly	26-Jul-20	7-Aug-20	Complete
Control Valves Inspection	4-Aug-20	22-Aug-20	Complete
Control Valves Refurbishment	4-Aug-20	21-Sep-20	Complete
Control Valves Reassembly	20-Aug-20	21-Sep-20	Complete
Main Stop Valve Disassembly	26-Jul-20	4-Aug-20	Complete
Main Stop Valve Inspection	4-Aug-20	17-Aug-20	Complete
Main Stop Valve Refurbishment	4-Aug-20	12-Sep-20	Complete
Main Stop Valve Reassembly	22-Aug-20	12-Sep-20	Complete
Reheat Stop/Intercept Valves Disassembly	26-Jul-20	4-Aug-20	Complete
Reheat Stop/Intercept Valves Inspection	4-Aug-20	31-Aug-20	Complete
Reheat Stop/Intercept Valves Refurbishment	4-Aug-20	15-Sep-20	Complete
Reheat Stop/Intercept Valves Reassembly	25-Aug-20	15-Sep-20	Complete
Blowdown Valve Disassembly	6-Aug-20	20-Aug-20	Complete
Blowdown Valve Inspection	21-Aug-20	20-Aug-20	Complete
Blowdown Valve Refurbishment	21-Aug-20	20-Aug-20	Complete
Blowdown Valve Reassembly	25-Aug-20	26-Aug-20	Complete
Extraction Steam Check Valves Disassembly	29-Jul-20	3-Aug-20	Complete
Extraction Steam Check Valves Inspection	5-Aug-20	22-Aug-20	Complete
Extraction Steam Check Valves Refurbishment	5-Aug-20	16-Sep-20	Complete
Extraction Steam Check Valves Reassembly	24-Aug-20	16-Sep-20	Complete
Commissioning	18-Oct-20	20-Oct-20	Not Started
Unit 2 Outage	6-Jul-20	16-Oct-20	In progress

2020–2021 Winter Readiness Planning Report
Appendix H: Holyrood Supplemental Capital Projects – Monthly Update
Page 4 of 4

Table 3: Project Status – Overhaul Unit 3 Boiler Feed Pump West

Approved Budget:	367.9			
Total Project YTD (\$000)	350.0			
Total Project Forecast (\$000)	367.9			
Major Milestones	Start Date	End Date	Status	Overall Project Update
BFP Disassembly	25-May-20	27-May-20	Complete	<ul style="list-style-type: none"> Through detailed inspection, the impeller shaft was found to be out of tolerance for straightness and runout.
Spare Volute Installed	28-May-20	28-May-20	Complete	Hydro completed all required refurbishment including shaft replacement. Letter explaining root cause has been submitted by Flowserve and was provided to Liberty for review.
BFP Reassembled	28-May-20	10-Jun-20	Complete	
Offline Commissioning	10-Jun-20	12-Jun-20	Complete	
Volute Refurbishment	25-Jun-20	30-Sep-20	Complete	<ul style="list-style-type: none"> Final commissioning will occur during start up when Unit 3 is returned to generation mode.
Final Commissioning	29-Oct-20	2-Nov-20	Not started	<ul style="list-style-type: none"> Expected to be completed on budget.

Table 4: Project Status – Overhaul Unit 2 Generator

Approved Budget:	1,294.1			
Total Project YTD (\$000)	1,268.2			
Total Project Forecast (\$000)	1,358.8			
Major Milestones	Start Date	End Date	Status	Overall Project Update
Disassembly of generator end shields, hydrogen seals, hydrogen coolers, and bearings	25-Jul-20	15-Aug-20	Complete	<ul style="list-style-type: none"> Collector-end and Turbine-end Hydrogen Seal sealing faces were found to be damaged. Seals were replaced with new to restore sealing efficiency and minimize hydrogen loss. This finding is considered to be consistent with normal wear and tear for this component.
Removal of the generator rotor from the stator.	11-Aug-20	11-Aug-20	Complete	
Cleaning of Internal Components	16-Aug-20	21-Sep-20	Complete	<ul style="list-style-type: none"> Two Stator Winding End-Caps damaged by a phenolic bolt that vibrated loose from the end-shield. Phenolic bolt lock nuts were epoxied in at reassembly. Bolts were installed in accordance with an inspection and test plan to ensure their security prior to closing unit.
Detailed visual inspection and NDE of internal components	28-Jul-20	9-Sep-20	Complete	
Replacement or refurbishment of components found to be damaged (Hydrogen Seals, Generator Bearings and Stator Winding End-Caps)	14-Aug-20	4-Sep-20	Complete	<ul style="list-style-type: none"> Generator elevation relative to Turbine was found to be 0.012" high and out of tolerance when measured at the coupling. Incorrect alignment can result in issues with bearing temperature, vibration and premature bearing wear. Correct generator elevation was restored at reassembly.
Generator Reassembly	4-Sep-20	9-Oct-20	In Progress	
Commissioning	18-Oct-20	20-Oct-20	Not Started	<ul style="list-style-type: none"> #4 and #5 Generator Bearings were found to be wiped on the lower halves. These were sent off-island for re-Babbitting. Re-Babbited bearings were installed in the unit. This finding is not surprising given that the generator was found to be set 0.012" relative to the turbine.
Unit 2 Outage	6-Jul-20	16-Oct-20	In Progress	<ul style="list-style-type: none"> Start-up commissioning dates are tentative and conditional on there being capacity on the grid to accept power from Unit 2.
				<ul style="list-style-type: none"> Expected to be 5% over the approved project budget.