Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-14-212

December 30, 2014

10 CFR 50.4
10 CFR 50.54(f)

Attn: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 1
Facility Operating License No. NPF-90
NRC Docket No. 50-390

Watts Bar Nuclear Plant, Unit 2
Construction Permit No. CPPR-92
NRC Docket No. 50-391

Subject: **Tennessee Valley Authority's Watts Bar Nuclear Plant Expedited Seismic Evaluation Process Report (CEUS Sites) Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident**

Reference: NRC Letter, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (ML12056A046)

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued the referenced letter to all power reactor licensees and holders of construction permits in active or deferred status. Enclosure 1 of the referenced letter requested each addressee located in the Central and Eastern United States (CEUS) to submit a Seismic Hazard Evaluation that includes "an interim evaluation and actions taken or planned to address the higher seismic hazard relative to the design basis, as appropriate, prior to completion of the risk evaluation."

In accordance with the referenced letter above, TVA is enclosing the Expedited Seismic Evaluation Process (ESEP) Report for Watts Bar Nuclear Plant.

There are no new regulatory commitments resulting from this submittal. Should you have questions concerning the content of this letter, please contact Mr. Kevin Casey at (423) 751-8523.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 30th day of December 2014.

Respectfully,

J. W. Shea

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J. W. Shea
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Enclosure: Expedited Seismic Evaluation Process (ESEP) Report for Watts Bar Nuclear Plant

cc (Enclosure):
NRR Director - NRC Headquarters
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NRR JLD Director - NRC Headquarters
NRC Regional Administrator - Region II
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NRR JLD Project Manager - Watts Bar Nuclear Plant
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ENCLOSURE

EXPEDITED SEISMIC EVALUATION PROCESS (ESEP) REPORT FOR WATTS BAR NUCLEAR PLANT

EXPEDITED SEISMIC EVALUATION PROCESS (ESEP) REPORT FOR WATTS BAR NUCLEAR PLANT

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1.0 PURPOSE AND OBJECTIVE

Following the accident at the Fukushima Dai-Ichi Nuclear Power Plant (NPP) resulting from the March 11, 2011, Great Tohoku Earthquake and subsequent tsunami, the Nuclear Regulatory Commission (NRC) established a Near-Term Task Force (NTTF) to conduct a systematic review of NRC processes and regulations and to determine if the agency should make additional improvements to its regulatory system. The NTTF developed a set of recommendations intended to clarify and strengthen the regulatory framework for protection against natural phenomena. Subsequently, the NRC issued a 50.54(f) letter on March 12, 2012 [1], requesting information to assure that these recommendations are addressed by all United States of America (U.S.) NPPs. The 50.54(f) letter requests that licensees and holders of construction permits under 10 CFR Part 50 reevaluate the seismic hazards at their sites against present-day United States NRC requirements and guidance. Depending on the comparison between the reevaluated seismic hazard and the current design basis, further risk assessment may be required. Risk assessment approaches acceptable to the staff include a Seismic Probabilistic Risk Assessment (SPRA), or a Seismic Margin assessment (SMA). Based upon the risk assessment results, the NRC staff will determine whether additional regulatory actions are necessary.

This Report describes the Expedited Seismic Evaluation Process (ESEP) undertaken for the Watts Bar NPP, Unit 1 and Unit 2 (WBNP). The intent of the ESEP is to perform an interim action in response to the NRC's 50.54(f) letter [1] to demonstrate Seismic Margin through a review of a subset of the plant equipment that can be relied upon to protect the Reactor Core following beyond design basis seismic events.

The ESEP is implemented using the methodologies in the NRC endorsed guidance in Electric Power Research Institute (EPRI) 3002000704, Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima NTTF Recommendation 2.1: Seismic [2].

The objective of this Report is to provide summary information describing the ESEP evaluations and results. The level of detail provided in the Report is intended to enable NRC to understand the inputs used, the evaluations performed, and the decisions made as a result of the interim evaluations.

2.0 BRIEF SUMMARY OF THE FLEX SEISMIC IMPLEMENTATION STRATEGIES

The Watts Bar Nuclear Plant FLEX response strategies for Reactor Core Cooling and Heat Removal, Reactor Inventory Control/Long-term Subcriticality, and Containment Function are summarized below. This summary is derived from the WBNP Overall Integrated Plan (OIP) in Response to the March 12, 2012, Commission Order EA-12-049 [3].

For At Power Conditions

Core Cooling and Heat Removal

Reactor core cooling and heat removal is achieved via steam release from the Steam Generators (SGs) with SG makeup from the Turbine Driven Auxiliary Feedwater Pump (TDAFWP) during FLEX Phase 1 with suction from the Auxiliary Feedwater Storage Tank. Local control and operation of the SG Atmospheric Relief Valves (ARVs) and the TDAFWP system is available and proceduralized so that operation from the main control room is not required.

To provide an unlimited supply of water for core cooling during Phase 2, portable LP FLEX Pumps will be staged at the Intake Pump Station (IPS) and take suction from the intake channel and discharge to

four emergency raw cooling water (ERCW) FLEX connections inside the IPS. They will be used to pressurize the ERCW headers which can then be used for direct supply to the TDAFWP suction.

When the TDAFWP becomes unavailable due to reduction in available steam pressure, a permanently installed IP FLEX pump will be used to continue to supply feedwater to the SGs. Suction would be from an ERCW FLEX connection on AB elevation (EL) 737 feet (ft). The discharge is routed by hose to the TDAFWP discharge FLEX connections on EL 729 ft in the South MSVV.

For Phase 3, WBNP will continue the Phase 2 coping strategies.

Reactor Inventory control

For Phase 1, Reactor Coolant System (RCS) makeup will be provided by the cold leg accumulators. RCS depressurization and cool down will be initiated as soon as possible to reduce the Reactor Coolant Pump (RCP) seal leakage rate.

In Phase 2, RCS makeup will be provided by repowering existing Safety Injection (SI) pumps and using the pumps to inject borated water as needed into the RCS. The SI pumps will be repowered with a 3 MWe FLEX Diesel Generator. The SI pumps can be manually controlled with hand switches on Main Control Room Panel M-6. The source of RCS makeup will be the Refueling Water Storage Tank (RWST). Component Cooling System (CCS) pumps will be repowered using the 3 MWe FLEX diesel generators to provide cooling water to the SI pump oil cooler.

Later in Phase 2, when the RCS is depressurized sufficiently, a permanently installed HP FLEX pump will be used to inject borated water into the RCS through SI piping. These pumps would be aligned with a suction hose from RWST FLEX connections located on AB EL 692 ft and a discharge hose routed to a SIP discharge FLEX header connection on AB EL 692 ft. The HP FLEX Pumps are fed from and operated from the 480v C&A Vent Boards 1A2-2 and 2B2-2.

For Phase 3, WBNP will continue the Phase 2 coping strategies.

Containment Function

There are no Phase 1 FLEX actions to maintain containment integrity. The primary Phase 2 FLEX strategy for containment integrity entails repowering one train of hydrogen igniters. For Phase 2, a Containment Air Return Fan inside of containment can be repowered.

For Phase 3, WBNP will continue the Phase 2 coping strategies.

Support Systems

Key reactor parameters to be monitored during FLEX implementation are measured and indicated by instrumentation that is powered by the 125V DC vital battery. During Phase 1, the vital batteries provide power to needed instrumentation through the vital battery boards, vital inverters and vital instrument power boards.

During Phase 2, power to vital instrumentation will be maintained by supplying 480V AC power to the vital battery chargers through new, fused, FLEX distribution panels, which will be connected directly to the battery chargers. 480V AC power will be supplied to the distribution panels by pre-staged, 480V AC FLEX diesel generators located on the roof of the Auxiliary Building.

During the early portions of Phase 2, the 6.9kV switchgear and 6.9kV Shutdown Boards will be energized with a pre-staged 3 MWe FLEX diesel generator located in the FLEX building. This will allow re-energizing the SI pumps for inventory control.

For Phase 3, WBNP will continue the Phase 2 coping strategies.

For Shutdown Conditions

Reactor core cooling and heat removal with SGs not available is provided during Phase 1 by heating up and boiling of the RCS coolant inventory.

RCS inventory during Phase 1 may be maintained by gravity feed from the RWST at each unit. The ability of the RWST at each unit to provide a gravity feed to the RCS is limited by the RWST fluid height, line losses through the gravity feed path, and pressure within the RCS.

If it is determined that gravity feed is not effective to cool the RCS and prevent fuel damage, Watts Bar has taken actions to proceduralize administrative controls to pre-stage FLEX equipment prior to entering a condition where the SGs cannot provide adequate core cooling.

With SGs unavailable the transition to Phase 2 strategies will be required as inventory is lost from the RCS. Prior to loss of gravity feed from the RWST, the permanently installed 480v motor driven Mode 5 & 6 IP FLEX pump must be aligned to take suction from the RWST and deliver the coolant to the RCS via the Safety Injection System FLEX connections. Power supply and control are from the 480v C&A Vent Boards. Sufficient flushing flow will be needed to prevent boron precipitation.

Reactor core cooling with SGs not available is adequately maintained via the Phase 2 strategy.

For Phase 3, WBNP will continue the Phase 2 coping strategies.

WBNP will follow the guidance contained within the Nuclear Energy Institute (NEI) position paper dated September 18, 2013, entitled “Position Paper: Shutdown/Refueling Modes” (ADAMS No. ML13273A514) [23].

3.0 EQUIPMENT SELECTION PROCESS AND ESEL

The selection of equipment for the Expedited Seismic Equipment List (ESEL) followed the guidelines of EPRI 3002000704 [2]. The ESEL for Unit 1 and Unit 2 in presented in Attachments A. Information presented in Attachment A is drawn from [25].

3.1 Equipment Selection Process and ESEL

The selection of equipment to be included on the ESEL was based on installed plant equipment credited in the FLEX strategies during Phase 1, 2, and 3 mitigation of a Beyond Design Basis External Event (BDBEE), as outlined in the WBNP OIP in Response to the March 12, 2012, Commission Order EA-12-049 [3]. The OIP provides the WBNP FLEX mitigation strategy and serves as the basis for equipment selected for the ESEP.

The scope of “installed plant equipment” includes equipment relied upon for the FLEX strategies to sustain the critical functions of core cooling and containment integrity consistent with the Watts Bar OIP [3]. FLEX mitigation recovery actions are excluded from the ESEP scope per EPRI 3002000704 [2]. The overall list of planned FLEX modifications and the scope for consideration herein is limited to those required to support core cooling, reactor coolant inventory and subcriticality, and containment integrity functions. Portable and pre-staged FLEX equipment (not permanently installed) are excluded from the ESEL per EPRI 3002000704.

The ESEL component selection follows the EPRI guidance outlined in Section 3.2 of EPRI 3002000704.

1. The scope of components is limited to that required to accomplish the core cooling and containment safety functions identified in Table 3-2 of EPRI 3002000704 [2]. The instrumentation monitoring requirements for core cooling/containment safety functions are limited to those outlined in the EPRI 3002000704 guidance, and are a subset of those outlined in the Watts Bar OIP [3].
2. The scope of components is limited to installed plant equipment and FLEX connections necessary to implement the Watts Bar, as described in Section 2.
3. The scope of components assumes the credited FLEX connection modifications are implemented, and are limited to those required to support a single FLEX success path (i.e., either "Primary" or "Back-up/Alternate").
4. The "Primary" FLEX success path is to be specified. Selection of the "Back-up/Alternate" FLEX success path must be justified.
5. Phase 3 coping strategies are included in the ESEP scope, whereas recovery strategies are excluded.
6. Structures, systems, and components excluded per the EPRI 3002000704 guidance are:
   - Structures (e.g. containment, reactor building, control building, auxiliary building, etc.).
   - Piping, cabling, conduit, HVAC, and their supports.
   - Manual valves and rupture disks.
   - Power-operated valves not required to change state as part of the FLEX mitigation strategies.
   - Nuclear steam supply system components (e.g. RPV and internals, reactor coolant pumps and seals, etc.).
7. For cases in which neither train was specified as a primary or back-up strategy, then only one train component (generally 'A' train) is included in the ESEL.

3.1.1 ESEL Development

The ESEL was developed by reviewing the WBNP OIP [3] to determine the major equipment involved in the FLEX strategies. Further reviews of plant drawings (e.g., Process and Instrumentation Diagrams (P&IDs) and Electrical One-Line Diagrams) were performed to identify the boundaries of the flow paths to be used in the FLEX strategies and to identify specific components in the flow paths needed to support implementation of the FLEX strategies.

Boundaries were established at an electrical or mechanical isolation device (e.g., isolation amplifier, valve, etc.) in branch circuits/branch lines off the defined strategy electrical or fluid flowpath. P&IDs were the primary reference documents used to identify mechanical components and instrumentation. The flow paths used for FLEX strategies were selected and specific components were identified using detailed equipment and instrument drawings, piping isometrics, electrical schematics and one-line drawings, system descriptions, design basis documents, etc., as necessary.

3.1.2 Power-Operated Valves

Page 3-3 of EPRI 3002000704 [2] notes that power operated valves not required to change state as part of the FLEX mitigation strategies are excluded from the ESEL. Page 3-2 also notes that "functional

failure modes of electrical and mechanical portions of the installed Phase 1 equipment should be considered (e.g. Auxiliary Feedwater (AFW) trips)." To address this concern, the following guidance is applied in the Watts Bar ESEL for functional failure modes associated with power operated valves:

- Power operated valves that remain energized during the ELAP events (such as DC powered valves), were included on the ESEL.
- Power operated valves not required to change state as part of the FLEX mitigation strategies were not included on the ESEL. The seismic event also causes the ELAP event; therefore, the valves are incapable of spurious operation as they would be de-energized.
- Power operated valves not required to change state as part of the FLEX mitigation strategies during Phase 1, and are re-energized and operated during subsequent Phase 2 and 3 strategies, were not evaluated for spurious valve operation as the seismic event that caused the ELAP has passed before the valves are re-powered.

3.1.3 Pull Boxes

Pull boxes were deemed unnecessary to add to the ESELs as these components provide completely passive locations for pulling or installing cables. No breaks or connections in the cabling are included in pull boxes. Pull boxes were considered part of conduit and cabling, which are excluded in accordance with EPRI 3002000704 [2].

3.1.4 Termination Cabinets

Termination cabinets, including cabinets necessary for FLEX Phase 2 and 3 connections, provide consolidated locations for permanently connecting multiple cables. The termination cabinets and the internal connections provide a completely passive function; however, the cabinets are included in the ESEL to ensure industry knowledge on panel/anchorage failure vulnerabilities is addressed.

3.1.5 Critical Instrumentation Indicators

Critical indicators and recorders are typically physically located on panels/cabinets and are included as separate components; however, seismic evaluation of the instrument indication may be included in the panel/cabinet seismic evaluation (rule-of-the-box).

3.1.6 Phase 2 and 3 Piping Connections

Item 2 in Section 3.1 above notes that the scope of equipment in the ESEL includes "….FLEX connections necessary to implement the WBNP OIP [3] as described in section 2." Item 3 in Section 3.1 also notes that "The scope of components assumes the credited FLEX connection modifications are implemented, and are limited to those required to support a single FLEX success path (i.e., either "Primary" or "Back-up/Alternate")." Item 6 in Section 3.1 above goes on to explain that "Piping, cabling, HVAC, and their supports" are excluded from the ESEL scope in accordance with EPRI 3002000704 [2].

Therefore, piping and pipe supports associated with FLEX Phase 2 and Phase 3 connections are excluded from the scope of the ESEP evaluation. However, any active valves in FLEX Phase 2 and Phase 3 connection flow path are included in the ESEL.

3.2 Justification for Use of Equipment that is not the Primary Means for FLEX Implementation

The WBNP ESEL is based on the primary means of implementing the FLEX strategy. Therefore, no additional justification is required.

4.0 GROUND MOTION RESPONSE SPECTRUM (GMRS)

4.1 Plot of GMRS Submitted by the Licensee

The Safe Shutdown Earthquake (SSE) control point is defined at the reactor building (RB) foundation level at elevation 684 ft and is the deepest structure foundation control point. Table 4-1 shows the GMRS accelerations for a range of frequencies. The GMRS at the control point elevation is shown in Figure 4-1 [4].

Table 4-1 GMRS for Watts Bar Nuclear Plant

Frequency (Hz)	GMRS (g)
100	3.68E-01
90	3.71E-01
80	3.77E-01
70	3.89E-01
60	4.21E-01
50	4.95E-01
40	5.93E-01
35	6.40E-01
30	6.80E-01
25	7.23E-01
20	7.59E-01
15	7.66E-01
12.5	7.58E-01
10	7.26E-01
9	6.90E-01
8	6.55E-01
7	6.12E-01
6	5.60E-01

Table 4-1 GMRS for Watts Bar Nuclear Plant (Continued)

Frequency (Hz)	GMRS (g)
5	4.93E-01
4	3.95E-01
3.5	3.46E-01
3	2.99E-01
2.5	2.50E-01
2	2.28E-01
1.5	1.95E-01
1.25	1.65E-01
1	1.26E-01
0.9	1.13E-01
0.8	1.03E-01
0.7	9.51E-02
0.6	8.71E-02
0.5	7.67E-02
0.4	6.13E-02
0.35	5.37E-02
0.3	4.60E-02
0.25	3.83E-02
0.2	3.07E-02
0.15	2.30E-02
0.125	1.92E-02
0.1	1.53E-02

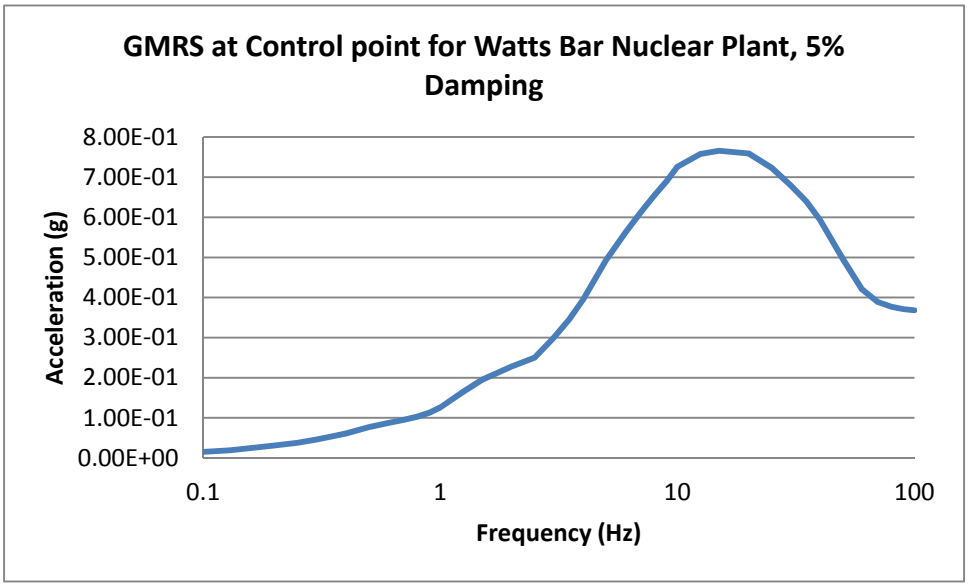

Figure 4-1: GMRS for Watts Bar Nuclear Plant

4.2 Comparison to SSE

The SSE was developed in accordance with 10 CFR Part 100 Appendix A through an evaluation of the maximum earthquake potential for the region surrounding the site. The SSE horizontal spectrum at the WBNP site derives from the maximum historic earthquake reported in the site province (the 1897 Giles County event) placed adjacent to the Site. The SSE response spectrum is characterized by a peak ground acceleration (PGA) of 0.18 acceleration of gravity (g) and a shape that conforms to a modified Newmark spectrum [6], which is similar to the Regulatory Guide (RG) 1.60 spectral shape. Figure 4-2 compares the GMRS to the SSE and illustrates that the GMRS exceeds the SSE in the frequency range above 4.5 Hertz (Hz). The maximum ratio of GMRS to SSE between 1 Hz and 10 Hz occurs at a frequency of 10 Hz and that ratio is approximately 2.0.

Table 4-2: SSE for Watts Bar Nuclear Plant

0.5	0.11
1	0.22
2	0.46
2.5	0.46
5	0.46
6.67	0.46
10	0.36
25	0.22
33	0.18
100	0.18

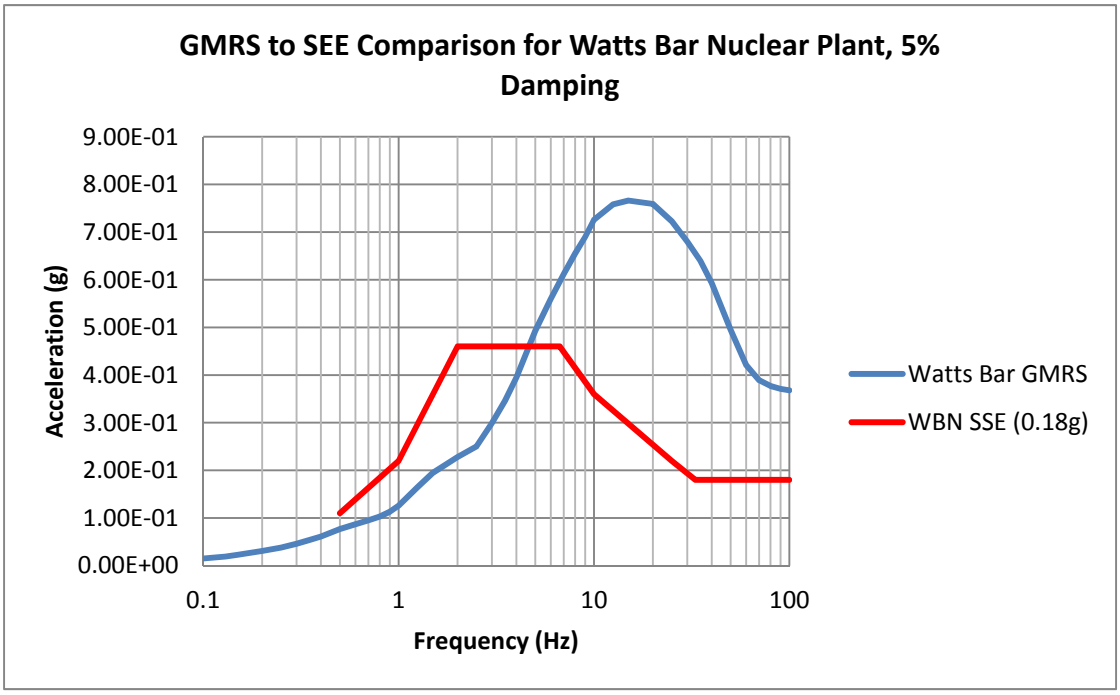

Figure 4-2: GMRS to SSE Comparison for Watts Bar Nuclear Plant

5.0 REVIEW LEVEL GROUND MOTION (RLGM)

5.1 Description of RLGM Selected

Section 4 of EPRI 3002000704 [2] presents two approaches for developing the RLGM to be used in the ESEP:

1. The RLGM may be derived by linearly scaling the SSE by the maximum ratio of the GMRS/SSE between the 1 and 10 Hz range (not to exceed 2x SSE). In-structure RLGM seismic motions would be derived using existing SSE based in-structure response spectra (ISRS) with the same scale factor.
2. Alternately, licensees who have developed appropriate structural/soil-structure interaction (SSI) models capable of calculating ISRS based on site GMRS/uniform hazard response spectrum (UHRS) input may opt to use these ISRS in lieu of scaled SSE ISRS.

Based on a review of tabulated data in Table 4-1 and the SSE values in Table 4-2, in the range between 1 and 10 Hz the maximum ratio of GMRS to the SSE is calculated to be:

$$SF_{max} = SA_{GMRS}(10\ HZ)/SA_{SSE}\ 10Hz) = 0.726g/0.36g = 2.02$$

Since the computed scale factor is greater than 2.0, the RLGM would be set a level of 2x SSE. This is shown in Table 5-1 and Figure 5-1.

Table 5-1 RLGM for Watts Bar Nuclear Plant

0.5	0.22
1	0.44
2	0.92
2.5	0.92
5	0.92
6.67	0.92
10	0.72
25	0.44
33	0.36
100	0.36

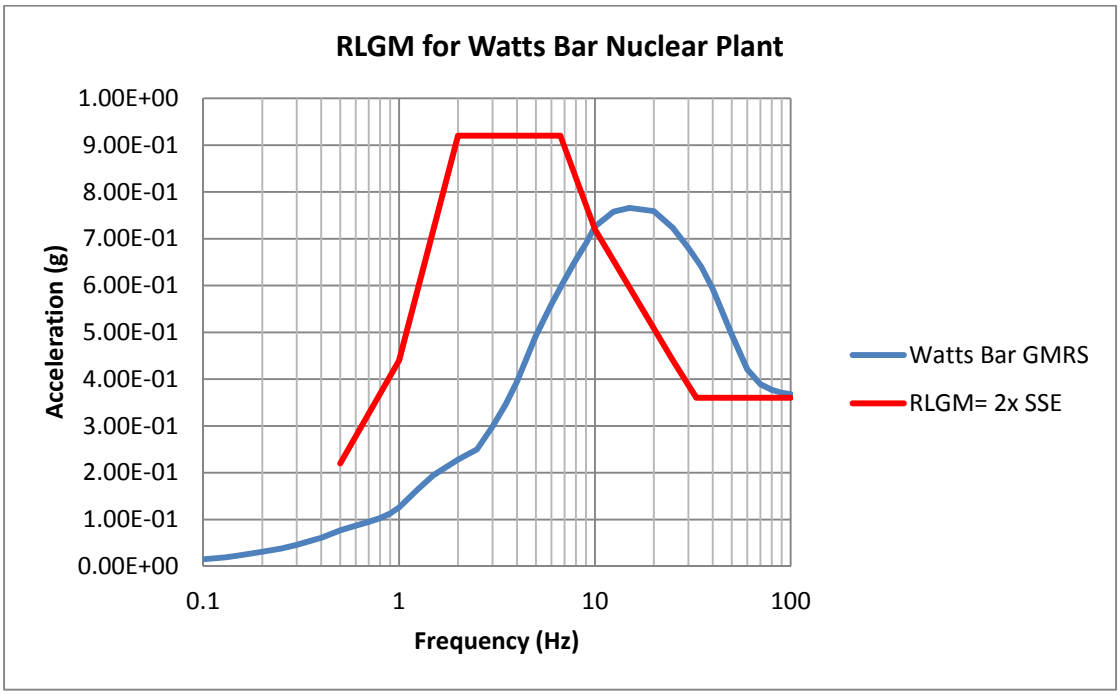

Figure 5-1: RLGM for Watts Bar Nuclear Plant

5.2 Method to Estimate In-Structure Response Spectra (ISRS)

EPRI SMA Methodology recommends that median centered response should be used in HCLPF calculations. The ISRS used in the updated IPEEE [12] are based on the NUREG-0098 median shape for rock with a PGA of 0.5g. As shown on Figure 5-2 this shape is similar to the SSE spectrum. This figure also illustrates that the updated IPEEE [12] RLE spectrum with a PGA of 0.5g envelops the RLGM over the entire range of frequencies. Therefore, the median centered ISRS developed in the updated IPEEE [12] represent the seismic demand on which the HCLPF values reported here are based.

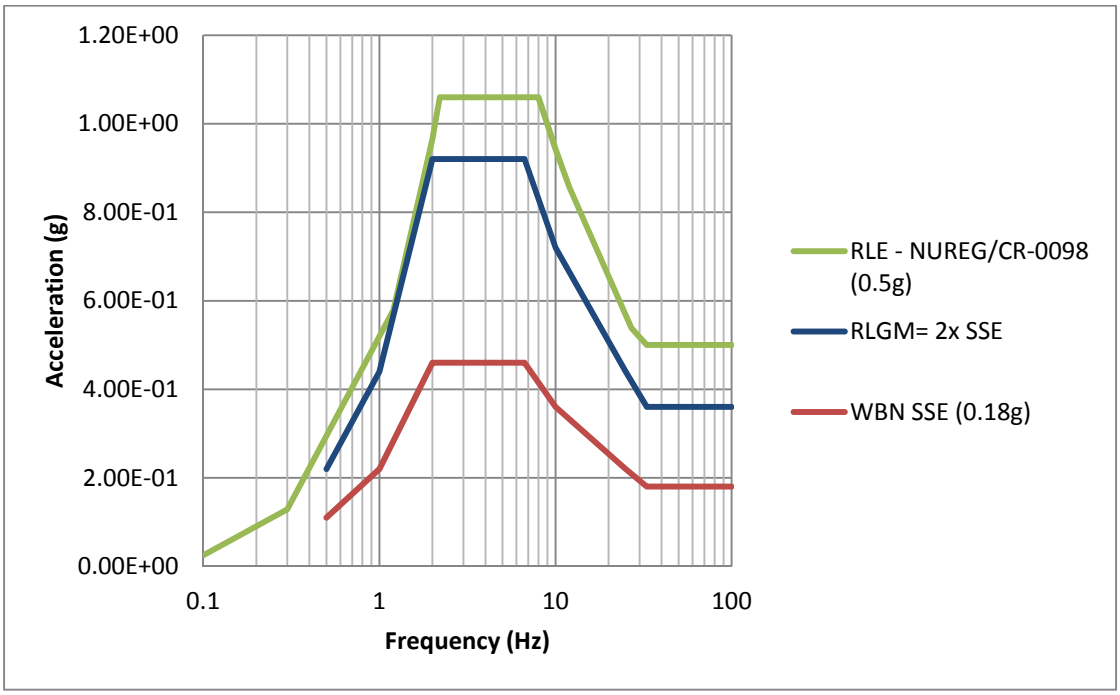

Figure 5-2: NUREG/CR-0098 (0.5g) versus Watts Bar Nuclear Plant SSE

6.0 SEISMIC MARGIN EVALUATION APPROACH

It is necessary to demonstrate that ESEL items have sufficient seismic capacity to meet or exceed the demand characterized by the RLGM. The seismic capacity is characterized as the PGA for which there is a HCLPF. The PGA is associated with a specific spectral shape, in this case the 5%-damped RLGM spectral shape. The HCLPF capacity must be equal to or greater than the RLGM PGA. The criteria for seismic capacity determination are given in Section 5 of EPRI 3002000704 [2].

There are two basic approaches for developing HCLPF capacities:

1. Deterministic approach using the conservative deterministic failure margin (CDFM) methodology of EPRI NP-6041-SL, A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1) [8] .
2. Probabilistic approach using the fragility analysis methodology of EPRI TR-103959, Methodology for Developing Seismic Fragilities [10] .

6.1 Summary of Methodologies Used

WBNP performed a SMA for Unit 1 in 1998 [11] and completed an IPEEE Final Report for Unit 2 in 2014 [21]. The SMA consisted of screening walkdowns, functional evaluation, and HCLPF anchorage calculations. The screening walkdowns used the screening tables from Chapter 2 of EPRI NP-6041 [8]. The walkdowns were conducted by engineers trained in EPRI NP 6041 (the engineers attended the EPRI SMA Add-On course in addition to the Seismic Qualification Utility Group (SQUG) Walkdown Screening and Seismic Evaluation Training Course), and were documented on Screening Evaluation Work Sheets from EPRI NP-6041. Anchorage capacity calculations used the CDFM criteria from EPRI NP-6041. Seismic demand was the IPEEE Review Level Earthquake (RLE) for SMA (median NUREG/CR-0098 [6] ground response spectrum for rock anchored to 0.3g PGA).

After submittal of the IPEEE Reports to the NRC and considering insights into the seismic ruggedness of WBN equipment obtained from the IPEEE reports, WBN performed updated HCLPF capacity evaluations. The updated HCLPF capacity evaluations focused on removing excess conservatism and determining HCLPF capacity in a more accurate manner. The updated HCLPF evaluations document a minimum HCLPF of 0.5g for components on the IPEEE SSEL [12].

Considering insights from the updated HCLPF evaluations, a minimum HCLPF of 0.5 g was selected as the RLE for the SMA in the ESEP. Figure 5-2 shows the median NUREG/CR-0098 (0.5g) ground response spectrum selected as the RLE for the SMA in the ESEP, compared to the required ESEP RLGM response spectrum. The figure shows that the selected ESEP RLE envelops the required ESEP RLGM at all frequencies.

6.2 HCLPF Screening Process

The screening capacity in EPRI NP-6041 [8] Table 2-4 based on ground peak spectral accelerations of 1.2g exceeds the RLGM peak spectral acceleration. The anchorage capacity calculations were based on floor response spectra generated for the RLE. Therefore, equipment for which the screening caveats were met and for which the anchorage capacity exceeds the RLE seismic demand associated with the PGA of 0.5g can be screened out from ESEP seismic capacity determination because the HCLPF capacity exceeds the RLGM.

The combined Unit 1 and Unit 2 ESEL includes 452 items. Of these, 87 are valves, both power-operated and relief. In accordance with Table 2-4 of EPRI NP-6041 [8], active valves may be assigned a functional capacity of 1.2g peak spectral acceleration, and anchorage is not a failure mode if “evaluation recommended for motor-operated valves in piping lines of 2 inches diameter or less” is performed. Therefore, valves on the ESEL may be screened out from ESEP seismic capacity determination, subject to the caveat regarding large extended operators on small diameter piping. Power-operated valves were addressed in the WBNP Unit 1 and 2 IPEEE SMA. In the SMA, the valves were found to meet EPRI NP-6041 Figures F-25 and F-26 (thus meeting the 1.2g peak spectral acceleration screening criteria) or to exceed the RLE floor response spectra on the basis of vendor seismic qualification reports.

The IPEEE SMA reviews covered 449 valves in Unit 1, and 27 valves described as “Unit 0”. This review focused on motor-operated valves on small diameter piping and valves at high elevations in the plant. Relief valves were not included in the IPEEE review except for the power-operated relief valves, which met the criteria. Spring-operated relief valves are considered to meet the EPRI NP-6041 1.2g peak spectral acceleration screening criteria without explicit review. On the basis of the above, the ESEL valves may be screened out from ESEP seismic capacity determination.

The non-valve components in the ESEL are generally screened based on the SMA results. If the SMA showed that the component met the EPRI NP-6041 screening caveats and the CDFM capacity exceeded the RLE demand, the component can be screened out from the ESEP capacity determination.

Individual instrumentation items are generically associated with instrument racks and instrument panels. These will be assigned HCLPF values based on similar assemblies evaluated in the IPEEE.

The ESEL includes an “instrument loop” for parameters monitored during the FLEX implementation. A typical loop consists of a probe or sensor, an indicator and/or transmitter on a local rack, a cabinet in the Auxiliary Instrument Room, an indicator in the Main Control Room, and an indicator in the Aux Control Room. Panels in the Main Control Room, Aux Control Room, and the Aux Instrument Room

have been screened by the updated IPEEE evaluation [12] as discussed above, and all probes or sensors will be boxed/mounted with their respective component.

6.3 Seismic Walkdown Approach

6.3.1 Walkdown Approach

Walkdowns were performed in accordance with the criteria provided in Section 5 of EPRI 3002000704 [2], which refers to EPRI NP-6041 [8] for the SMA process. Pages 2-26 through 2-30 of EPRI NP-6041 [8] describe the seismic walkdown criteria, including the following key criteria.

"The SRT [Seismic Review Team] should "walk by" 100% of all components which are reasonably accessible and in non-radioactive or low radioactive environments. Seismic capability assessment of components which are inaccessible, in high-radioactive environments, or possibly within contaminated containment, will have to rely more on alternate means such as photographic inspection, more reliance on seismic reanalysis, and possibly, smaller inspection teams and more hurried inspections. A 100% "walk by" does not mean complete inspection of each component, nor does it mean requiring an electrician or other technician to de-energize and open cabinets or panels for detailed inspection of all components. This walkdown is not intended to be a QA or QC review or a review of the adequacy of the component at the SSE level.

If the SRT has a reasonable basis for assuming that the group of components are similar and are similarly anchored, then it is only necessary to inspect one component out of this group. The "similarity-basis" should be developed before the walkdown during the seismic capability preparatory work (Step 3) by reference to drawings, calculations, or specifications. The one component or each type which is selected should be thoroughly inspected which probably does mean de-energizing and opening cabinets or panels for this very limited sample. Generally, a spare representative component can be found so as to enable the inspection to be performed while the plant is in operation. At least for the one component of each type which is selected, anchorage should be thoroughly inspected.

The walkdown procedure should be performed in an ad hoc manner. For each class of components the SRT should look closely at the first items and compare the field configurations with the construction drawings and/or specifications. If a one-to-one correspondence is found, then subsequent items do not have to be inspected in as great a detail. Ultimately the walkdown becomes a "walk by" of the component class as the SRT becomes confident that the construction pattern is typical. This procedure for inspection should be repeated for each component class; although, during the actual walkdown the SRT may be inspecting several classes of components in parallel. If serious exceptions to the drawings or questionable construction practices are found then the system or component class must be inspected in closer detail until the systematic deficiency is defined.

The 100% "walk by" is to look for outliers, lack of similarity, anchorage which is different from that shown on drawings or prescribed in criteria for that component, potential SI [Seismic Interaction] problems, situations that are at odds with the team members' past experience, and any other areas of serious seismic concern. If any such concerns surface, then the limited sample size of one component of each type for thorough inspection will have to be increased. The increase in sample size which should be inspected will depend upon the number of outliers and different anchorages, etc., which are observed. It is up to the SRT to ultimately select the sample size since they are the ones who are responsible for the seismic adequacy of all elements which they screen from the margin review. Appendix D gives guidance for sampling selection."

Attachment A was consolidated from the 452 components into a walkdown list containing 210 components. Consolidated from this list are components in the previously credited walkdowns and components that are mounted on or 'boxed' into other components. The details of these walkdown are summarized in ESEP Walkdown Package [19].

6.3.2 Application of Previous Walkdown Information

Previous seismic walkdowns were used to support the ESEP seismic evaluations. Some of the components on the ESEL were included in the NTTF 2.3 seismic walkdowns [18]. Those walkdowns were recent enough that they did not need to be repeated for the ESEP.

Several ESEL items were previously walked down during the WBNP Unit 1 and 2 Seismic IPEEE program. Additionally, previous walkdowns performed as part of the Unit 1 and Unit 2 Integrated Interaction Program (IIP) and Equipment Seismic Qualification (ESQ) Programs as referenced in the WBN Unit 1 and Unit 2 IPEEE reports are also credited. Those walkdown results were reviewed and the following steps were taken to confirm that the previous walkdown conclusions remained valid.

- A walk by was performed to confirm that the equipment material condition and configuration is consistent with the walkdown conclusions and that no new significant interactions related to block walls or piping attached to tanks exist.
- If the ESEL item was screened out based on the previous walkdown, that screening evaluation was reviewed and reconfirmed for the ESEP.

The construction work on WBN2 is currently on-going. However, the construction and equipment installation is sufficiently complete so that a seismic margins walkdown of items of equipment that are unique to the WBN2 ESEL could be performed. This walkdown was recently completed as part of the ESEP in accordance with the requirements of the EPRI SMA methodology.

6.3.3 Significant Walkdown Findings

Consistent with the guidance from NP-6041 [8], no significant outliers or anchorage concerns were identified during the WBNP seismic walkdowns. The following findings were noted during the walkdowns, but are not considered significant.

- Several block walls were identified in the proximity of ESEL equipment. These block walls were also identified during the IPEEE walkdown and assessed for their structural adequacy to withstand the seismic loads resulting from the RLE. Per IPEEE, all block walls at Watts Bar exceed the HCLPF limit of the ESEP and are adequate [21].
- WBN-2-DPL-268-1 – Panel is adjacent to block wall (corresponding Unit 1 panel is not near wall). As stated above, this block wall is adequate.
- WBN-0-XSW-236-1/A-S, WBN-0-XSW-236-2/A-S, and WBN-0-XSW-236-3/A-S – Panels are mounted on partition walls. The partition walls are load rated and considered part of building structure, thus the walls are not considered part of the scope for the ESEL.
- WBN-0-PNL-360-FP/A, and FP/B – Both panels are in contact with, but not tied to, a cable tray support above. These interactions are judged to be credible, but not significant by the SRT.

- WBN-2-MCC-213-A1 – Motor Control Center (MCC) has interaction issue with an overhead cable tray support. This MCC was reviewed under the IPEEE evaluation for the plant and all potential interactions were resolved for RLGM [21].
- WBN-1-PNL-276-L1000 – Two anchor bolts project from the floor about an inch higher than the typical installation. Embedment adequacy for these bolts is addressed and it has been verified that the minimum embedment for the anchors has been met.

The findings and other information developed from the ESEP walkdown are summarized in ESEP Walkdown Package [19]. Based on walkdown results, HCLPF capacity evaluations were recommended for the following twelve (12) components.

- Motor Control Centers and Switchgear
- Transformers
- Control and Instrumentation Panels
- Instrument Racks
- Distribution Panels
- Engine Generators
- Horizontal Pumps
- Air Operated Valves
- Motor Operated Valves
- Vertical Tanks and Heat Exchangers
- Horizontal Tanks and Heat Exchangers
- Relays

6.4 HCLPF Calculation Process

ESEL items not included in the previous updated IPEEE evaluations at WBNP were evaluated using the criteria in EPRI NP-6041 [8]. Those evaluations included the following steps:

- Performing seismic capability walkdowns for equipment not included in previous seismic walkdowns (SQUG, IPEEE, or NTTF 2.3) to evaluate the equipment installed plant conditions
- Performing screening evaluations using the screening tables in EPRI NP-6041 as described in Section 6.2
- Performing HCLPF calculations considering various failure modes that include both structural failure modes (e.g., anchorage, load path, etc.) and functional failure modes

All HCLPF calculations were performed using the CDFM methodology and are documented in the Summary of HCLPF Calculations for WBNP ESEP [20]. The HCLPF capacities for functionality are based on the comparison of the demand (ISRS) with EPRI 6041 [8] screening level HCLPFs, GERS, or test response spectra. ESEL items not included in the previous updated IPEEE evaluations have HCLPF ≥ 0.5g.

6.5 Functional Evaluations of Relays

ESEP considers cabinets and equipment controls containing relays, contactors, switches, circuit breakers and other electrical and instrumentation components that could be affected by high-frequency earthquake motions and that impact operation of equipment in the ESEL.

A focused scope SMA was performed to support the IPEEE for WBNP as summarized in the February 1998 WBNP Unit 1 IPEEE submittal [11] and the November 2014 WBNP Unit 2 IPEEE Final Report [21]. The relay evaluation for a focused-scope plant is limited to a review of low seismic ruggedness relays (bad actor relays). The relay evaluation documented that there are no low seismic ruggedness relays used in applications which qualify them as essential relays.

In 2013, as part of the additional evaluations to document a HCLPF of 0.5g, a relay seismic functionality evaluation was performed for Unit 1 and 2. The purpose of the relay functionality evaluation was to verify that safe shutdown systems modeled in the WBN IPEEE would not be prevented from performing their safe shutdown functions because of relay (contact) chatter during the period of strong motion. The relay evaluation found that relay (contact) chatter during the period of strong motion would not prevent safe shutdown systems in the WBN IPEEE from performing their safe shutdown functions [22].

For the WBNP ESEP Analysis, an evaluation was performed to identify components that are (1) needed for FLEX implementation, (2) not on the IPEEE SSEL, and (3) that have the potential for relay chatter issues. The evaluation identified two sets of components. The first set is System 46 relays associated with the auxiliary feedwater system. A HCLPF was calculated for the relays and in all cases, the HCLFP ≥ 0.5g [20]. The second set is the FCV-1-17 and FCV-1-18 steam isolation valves that can isolate the steam supply to the TDAFW pump. In the event of a steam line break, both of these valves can receive a close signal if high temperature is detected in the TDAFW pump room. However, because these valves are motor operated valves (MOV), with a Loss of Offsite Power (LOOP) the valves will not isolate even with a spurious “close” signal. Therefore, these valves do not present a problem for successful FLEX implementation.

6.6 Tabulated ESEL HCLPF Values (Including Key Failure Modes)

Tabulated ESEL HCLPF values are provided in Attachment B for Unit 1 and Unit 2 items, as well as for items common to both units. The following notes apply to the information in the tables.

- For items screened out using NP 6041 [8] screening tables, the screening level is provided as >RLGM (0.5g) and the failure mode is listed as “Screened”, (unless the controlling HCLPF value is governed by anchorage).
- For items where anchorage controls the HCLPF value, the HCLPF value is listed in the table and the failure mode is noted as “anchorage.”

7.0 INACCESSIBLE ITEMS

7.1 Identification of ESEL items inaccessible for walkdowns

As concluded by ESEP Walkdown Package [19], no items on the ESEL were judged to require any further walkdowns to satisfy the ESEP evaluation

7.2 Planned Walkdown / Evaluation Schedule / Close Out

Unit 1 Containment was not accessible during the walk by verifications. The ESEL components inside the Unit 1 Containment are the same as those inside the Unit 2 Containment. Detailed close-up inspection of all ESEL components was performed for the components inside Unit 2 Containment. All of these Unit 2 ESEL components inside Unit 2 Containment were found to be well constructed, seismically rugged, and had adequate commodity clearance. The TVA Watts Bar radiation protection and operations groups maintain current photographs of all areas inside Unit 1 Containment. These photographs were made available to the walkdown team. The ESEP walkdown team reviewed the photographs and concluded that the ESEL components inside Unit 1 Containment are the same as those inside Unit 2 Containment. It was also concluded that the components were well constructed, seismically rugged, and had adequate commodity clearance [24]. Based on these observations, as concluded by the ESEP Walkdown Package [19], it is judged that no items on the ESEL require any further walkdowns to satisfy the ESEP evaluation.

8.0 ESEP CONCLUSIONS AND RESULTS

8.1 Supporting Information

WBNP has performed the ESEP as an interim action in response to the NRC's 50.54(f) letter [1]. It was performed using the methodologies in the NRC endorsed guidance in EPRI 3002000704 [2].

The ESEP provides an important demonstration of Seismic Margin and expedites plant safety enhancements through evaluations and potential near-term modifications of plant equipment that can be relied upon to protect the Reactor Core following beyond design basis seismic events.

The ESEP is part of the overall WBNP response to the NRC's 50.54(f) letter [1]. On March 12, 2014, NEI submitted to the NRC results of a study [13] of seismic core damage risk estimates based on updated seismic hazard information as it applies to operating nuclear reactors in the Central and Eastern United States (CEUS). The study concluded that "site-specific seismic hazards show that there […] has not been an overall increase in seismic risk for the fleet of U.S. plants" based on the reevaluated seismic hazards. As such, the "current seismic design of operating reactors continues to provide a safety margin to withstand potential earthquakes exceeding the seismic design basis."

The NRC's May 9, 2014 NTTF 2.1 Screening and Prioritization letter [15] concluded that the "fleetwide seismic risk estimates are consistent with the approach and results used in the GI-199 safety/risk assessment." The letter also stated that "As a result, the staff has confirmed that the conclusions reached in GI-199 safety/risk assessment remain valid and that the plants can continue to operate while additional evaluations are conducted."

An assessment of the change in seismic risk for WBNP was included in the fleet risk evaluation submitted in the March 12, 2014 NEI letter [13] therefore, the conclusions in the NRC's May 9 letter [15] also apply to WBNP.

In addition, the March 12, 2014 NEI letter [13] provided an attached "Perspectives on the Seismic Capacity of Operating Plants," which (1) assessed a number of qualitative reasons why the design of SSCs inherently contain margin beyond their design level, (2) discussed industrial seismic experience databases of performance of industry facility components similar to nuclear SSCs, and (3) discussed earthquake experience at operating plants.

The fleet of currently operating NPPs was designed using conservative practices, such that the plants have significant margin to withstand large ground motions safely. This has been borne out for those plants that have actually experienced significant earthquakes. The seismic design process has inherent (and intentional) conservatisms which result in significant seismic margins within SSCs. These conservatisms are reflected in several key aspects of the seismic design process, including:

- Safety factors applied in design calculations
- Damping values used in dynamic analysis of SSCs
- Bounding synthetic time histories for ISRS calculations
- Broadening criteria for ISRS
- Response spectra enveloping criteria typically used in SSCs analysis and testing applications
- Response spectra based frequency domain analysis, rather than explicit time history based time domain analysis
- Bounding requirements in codes and standards
- Use of minimum strength requirements of structural components (concrete and steel)
- Bounding testing requirements
- Ductile behavior of the primary materials (that is, not crediting the additional capacity of materials such as steel and reinforced concrete beyond the essentially elastic range, etc.)

These design practices combine to result in margins such that the SSCs will continue to fulfill their functions at ground motions well above the SSE.

The intent of the ESEP is to perform an interim action in response to the NRC's 50.54(f) letter [1] to demonstrate Seismic Margin through a review of a subset of the plant equipment that can be relied upon to protect the Reactor Core following beyond design basis seismic events. In order to complete the ESEP in an expedited amount of time, the RLGM used for the ESEP evaluation is a scaled version of the plant's SSE rather than the actual GMRS. To more fully characterize the risk impacts of the seismic ground motion represented by the GMRS on a plant-specific basis, a more detailed seismic risk assessment (SPRA or risk-based SMA) is to be performed in accordance with EPRI 1025287 [16]. As identified in the WBNP Seismic Hazard and GMRS submittal [4], WBNP screens in for a risk evaluation. The complete risk evaluation will more completely characterize the probabilistic seismic ground motion input into the plant, the plant response to that probabilistic seismic ground motion input, and the resulting plant risk characterization. WBNP will complete that evaluation in accordance with the schedule identified in NEI's letter dated April 9, 2013 [14] and endorsed by the NRC in their May 7, 2013 letter [17].

8.2 Identification of Planned Modifications

Based on the HCLPF values assigned according to the methodology described in Section 6.0, no necessary planned modifications are identified.

8.3 Modification Implementation Schedule

Per Section 8.2 above, no scheduling of modifications is required.

8.4 Summary of Regulatory Commitments

There are no additional actions to be performed as a result of the ESEP.

9.0 REFERENCES

1. NRC 2012, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3 and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," Nuclear Regulatory Commission, March 2012.
2. Electric Power Research Institute (EPRI) 3002000704, "Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1—Seismic," May 31, 2013.
3. Tennessee Valley Authority (TVA), Revised Overall Integrated Plan in Response to the March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049) for Watts Bar Nuclear Plant (TAC Nos. MF0950 and MF1177), February 7, 2014.
4. TVA, CNL-14-038, Seismic Hazard and Screening Report(CEUS Sites), Enclosure 4 - Seismic Hazard and Screening Report for Watts Bar Nuclear Plant, March 31, 2014.
5. EPRI, "Watts Bar Seismic Hazard and Screening Report," Electric Power Research Institute, Palo Alto, CA, dated February 7, 2014.
6. N.M. Newmark Consulting Engineering Services, NUREG/CR-0098, "Development of Criteria for Seismic Review of Selected Nuclear Power Plants," 1978.
7. Not Used
8. EPRI 1991, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin," EPRI NP-6041-SL, Revision 1, Electric Power Research Institute, Palo Alto, CA, USA, August 1991.
9. EPRI, 1991a, Seismic Ruggedness of Relays, EPRI, Palo Alto, California: August 1991, NP-7147-SL, 1991.
10. EPRI 1994, "Methodology for Developing Seismic Fragilities," EPRI TR-103959, Electric Power Research Institute, June 1994.
11. TVA, "Watts Bar Nuclear Plant Unit 1 Individual Plant Evaluation of External Events – Final Report,"1998.
12. TVA Calculation CDQ 000 999 2012 000125, "Updated WBN Seismic IPEEE HCLPF Capacity," April 2014.
13. NEI 2014, "Seismic Core Damage Risk Estimates Using the Updated Seismic Hazards for the Operating Nuclear Plants in the Central and Eastern United States," Nuclear Energy Institute, March 2014.
14. NEI 2013, "Proposed Path Forward for NTTF Recommendation 2.1: Seismic Reevaluations," Nuclear Energy Institute, April 2013.
15. NRC 2014, "Screening and Prioritization Results Regarding Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(F) Regarding Seismic Hazard Re-Evaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights From the Fukushima Dai-Ichi Accident," Nuclear Regulatory Commission, May 2014.

16. EPRI 2013a, “Seismic Evaluation Guidance: Screening, Prioritization and Implementation Details (SPID) for the resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic,” EPRI-1025287, Electric Power Research Institute, February 2013

17. NRC 2013, “Electric Power Research Institute Final Draft Report Xxxxxx, “Seismic Evaluation Guidance: Augmented Approach for the Resolution of Fukushima Near-Term Task Force Recommendation 2.1: Seismic,” as an Acceptable Alternative to the March 12, 2012, Information Request for Seismic Reevaluations,” Nuclear Regulatory Commission, May 2013.

18. NRC ADAMs Number ML12353A251, Enclosure 1 - “Watts Bar Nuclear Plant, Unit 1 Fukushima Near-Term Task Force Recommendation 2.3: Seismic Response Report,” 2012.

19. RIZZO, R15 - “ESEP Walkdown of Watts Bar Nuclear Plant Units 1 & 2,” October 21, 2014.

20. RIZZO, F-31, “Summary of HCLPF Calculations for WBNP ESEP Report,” October 21, 2014.

21 TVA, 2014, “Watts Bar Nuclear Plant Unit 2 (WBN2) Individual Plant Examination of External Events (IPEEE),” Revision 0, November 10, 2014.

22. Scientech, 2014, “WBN2 Enhanced IPEEE Relay Chatter Analysis Report,” Revision 0, March 4, 2014.

23. NEI 2013, “Position Paper: Shutdown/Refueling Modes.” Nuclear Energy Institute, September 2013. NRC ADAMS No. ML13273A514.

24. RIZZO, R12, “Seismic Walkdown of Watts Bar Nuclear Plant Units 1 and 2 Seismic Probabilistic Risk Assessment Project,” December 22, 2014.

25. TVA, 2014, “Whitepaper Watts Bar Nuclear Plant Expedited Seismic Equipment List,” December 20, 2014.

ATTACHMENT A - EXPEDITED SEISMIC EQUIPMENT LIST (ESEL) FOR WATTS BAR NUCLEAR PLANT

Table A-1: EXPEDITED SEISMIC EQUIPMENT LIST (ESEL) FOR WATTS BAR NUCLEAR PLANT

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
1	WBN-1-PNL-099-R48-A	Solid State Protection System Train A	Operational	Operational	
2	WBN-2-PNL-099-R50-B	Solid State Protection System Train B	Operational	Operational	
3	WBN-2-PNL-099-R2-D	Reactor Protection I Process System	Operational	Operational	
4	WBN-2-PNL-099-R48-A	Solid State Protection System Train A	Operational	Operational	
5	WBN-1-PNL-099-R50-B	Solid State Protection System Train B	Operational	Operational	
6	WBN-2-PNL-099-R6-E	Reactor Protection II Process System	Operational	Operational	
7	WBN-1-PNL-275-R179-A	ICCM System Train A CH 1	Operational	Operational	ICCM Train A Unit 1 Unit 1 Auxiliary Instrument Room
8	WBN-2-PNL-275-R179-A	Common Q PAMS Panel Train A	Operational	Operational	Common Q Train A Unit 2 Unit 2 Auxiliary Instrument Room
9	WBN-1-PNL-275-R180-B	ICCM System Train B CH 2	Operational	Operational	ICCM Train B Unit 1 Unit 1 Auxiliary Instrument Room
10	WBN-2-PNL-275-R180-B	Common Q PAMS Panel Train B	Operational	Operational	Common Q Train B unit 2 Unit 2 Auxiliary Instrument Room

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
11	WBN-2-HIC-068-396	RX HEAD VENT FLOW CONTROL	Operational	Operational	0-FSI-8; Main Control Room panel M4
12	WBN-2-PNL-099-R46-A	Solid State Protection System Train A	Operational	Operational	
13	WBN-2-PNL-099-R49-B	Solid State Protection System Train B	Operational	Operational	
14	WBN-2-PNL-099-R6-E	Reactor Protection II Process System	Operational	Operational	
15	WBN-1-ACUM-063-0001	SIS Accumulator Tank 1	Operational	Operational	
16	WBN-1-ACUM-063-0002	SIS Accumulator Tank 2	Operational	Operational	
17	WBN-1-ACUM-063-0003	SIS Accumulator Tank 3	Operational	Operational	
18	WBN-1-ACUM-063-0004	SIS Accumulator Tank 4	Operational	Operational	
19	WBN-0-BAT-236-0001-D	125 V Vital Battery I	Operational	Operational	
20	WBN-0-BAT-236-0002-E	125 V Vital Battery II	Operational	Operational	
21	WBN-0-BAT-236-0003-F	125 V Vital Battery III	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
22	WBN-0-BAT-236-0004-G	125 V Vital Battery IV	Operational	Operational	
23	WBN-1-BD-211-A-A	6.9 KV Shutdown Board 1A-A	Operational	Operational	Primary Path OIP Figure A3-24, 25, and 26
24	WBN-2-BD-211-B-B	6.9 KV Shutdown Board 2B-B	Operational	Operational	Primary Path OIP Figure A3-24 and A3-26. Also, see ESEL Item 200.
25	WBN-1-BD-212-A001-A	480V Shutdown Board 1A1-A	Operational	Operational	
26	WBN-2-BD-212-A001-A	480V Shutdown Board 2A1-A	Operational	Operational	Component Cooling System Pump 2A-A
27	WBN-1-BD-212-A002-A	480V Shutdown Board 1A2-A	Operational	Operational	Primary Path OIP Figure A3-24, 25, and 26
28	WBN-2-BD-212-B002-B	480V Shutdown Board 2B2-B	Operational	Operational	Containment Air Return Fan 39. ESEL # 146.
29	WBN-0-BD-236-0001-D	125V Vital Battery Board I	Operational	Operational	
30	WBN-0-BD-236-0002-E	125V Vital Battery Board II	Operational	Operational	
31	WBN-0-BD-236-0003-F	125V Vital Battery Board III	Operational	Operational	
32	WBN-0-BD-236-0004-G	125V Vital Battery Board IV	Operational	Operational	
33	WBN-0-CHGR-236-0001-D	125 V Vital Battery Charger I	Operational	Operational	
34	WBN-0-CHGR-236-0002/E	125 V Vital Battery Charger II	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
35	WBN-0-CHGR-236-0003/F	125 V Vital Battery Charger III	Operational	Operational	
36	WBN-0-CHGR-236-0004/G	125 V Vital Battery Charger IV	Operational	Operational	
37	WBN-1-HTX-070-0185	CCS HEAT EXCHANGER A	Operational	Operational	Flow path to support SIP lube oil cooler
38	WBN-2-HTX-070-0185	CCS HEAT EXCHANGER B	Operational	Operational	Flow path to support SIP lube oil cooler
39	WBN-1-HTX-074-0030-A	RHR HEAT EXCHANGER 1A	Operational	Operational	RWST gravity feed path Flow path to support SIP lube oil cooler
40	WBN-2-HTX-074-0031-A	RHR HEAT EXCHANGER 2A	Operational	Operational	RWST gravity feed path Flow path to support SIP lube oil cooler
41	WBN-1-INV-235-0001-D	120 V AC Vital Inverter 1-I	Operational	Operational	
42	WBN-2-INV-235-0001-D	120 V AC Vital Inverter 2-I	Operational	Operational	
43	WBN-1-INV-235-0002-E	120 V AC Vital Inverter 1-II	Operational	Operational	
44	WBN-2-INV-235-0002-E	120 V AC Vital Inverter 2-II	Operational	Operational	
45	WBN-1-INV-235-0003-F	120 V AC Vital Inverter 1-III	Operational	Operational	
46	WBN-2-INV-235-0003-F	120 V AC Vital Inverter 2-III	Operational	Operational	
47	WBN-1-INV-235-0004-G	120 V AC Vital Inverter 1-IV	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
48	WBN-2-INV-235-0004-G	120 V AC Vital Inverter 2-IV	Operational	Operational	
49	WBN-1-MCC-213-A001-A	480V Reactor MOV Board 1A1-A	Operational	Operational	FCV-63-80 and 118 Cold Leg 1 and 3 Accumulator Isolation
50	WBN-2-MCC-213-A001-A	480V Reactor MOV Board 2A1-A	Operational	Operational	FCV-63-80 and 118 Cold Leg 1 and 3 Accumulator Isolation
51	WBN-1-MCC-213-B001-B	480V Reactor MOV Board 1B1-B	Operational	Operational	FCV-63-98 and 67 Cold Leg 2 and 4 Accumulator Isolation
52	WBN-2-MCC-213-B001-B	480V Reactor MOV Board 2B1-B	Operational	Operational	FCV-63-98 and 67 Cold Leg 2 and 4 Accumulator Isolation
53	WBN-1-MCC-214-A001-A	Cont & Aux Bldg Vent Board 1A1-A	Operational	Operational	H2 igniters U1A
54	WBN-2-MCC-214-B001-B	Cont & Aux Bldg Vent Board 2B1-B	Operational	Operational	H2 igniters U2B
55	WBN-1-MCC-214-A002-A	Cont & Aux Bldg Vent Board 1A2-A	Operational	Operational	2 IP & 1 HP FLEX Pump. OIP Figure A3-23
56	WBN-2-MCC-214-B002-B	Cont & Aux Bldg Vent Board 2B2-B	Operational	Operational	2 IP & 2 HP FLEX Pump. OIP Figure A3-23
57	WBN-1-OXF-212-A001-A	480 V Transformer 1A1-A	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
58	WBN-2-OXF-212-A001-A	480 V Transformer 2A1-A	Operational	Operational	
59	WBN-1-OXF-212-A002-A	480 V Transformer 1A2-A	Operational	Operational	OIP Figure A3-24 and 26 , Primary Path
60	WBN-2-OXF-212-B002-B	480 V Transformer 2B2-B	Operational	Operational	OIP Figure A3-24 and 26 , Primary Path
61	WBN-1-PMP-062-0108-A	Centrifugal Charging Pump 1A-A	Operational	Operational	Pump oil cooler in flow path to support SIP lube oil cooler
62	WBN-2-PMP-062-0108-A	Centrifugal Charging Pump 2A-A	Operational	Operational	Pump 0il cooler in flow path to support SIP lube oil cooler
63	WBN-1-PMP-063-0010-A	SAFETY INJECTION PUMP 1A-A	Operational	Operational	OIP Figure A3-25 Primary Path
64	WBN-2-PMP-063-0010-A	SAFETY INJECTION PUMP 2A-A	Operational	Operational	OIP Figure A3-25 Primary Path
65	WBN-1-PMP-070-0046-A	Component Cooling System Pump 1A-A	Operational	Operational	support SIP lube oil cooler
66	WBN-2-PMP-070-0059-A	Component Cooling System Pump 2A-A	Operational	Operational	support SIP lube oil cooler
67	WBN-1-PMP-074-0010-A	RHR PUMP 1A-A	Operational	Operational	seal water heat exchanger in flow path for SIP lube oil cooler

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
68	WBN-2-PMP-074-0020-B	RHR PUMP 2B-B	Operational	Operational	seal water heat exchanger in flow path for SIP lube oil cooler
69	WBN-1-PNL-276-L011A	Steam Generator Level Control Panel	Operational	Operational	Auxiliary Control Room
70	WBN-2-PNL-276-L011A	Steam Generator Level Control Panel	Operational	Operational	Auxiliary Control Room
71	WBN-1-PNL-276-L011B	Steam Generator Level Control Panel	Operational	Operational	Auxiliary Control Room
72	WBN-2-PNL-276-L011B	Steam Generator Level Control Panel	Operational	Operational	Auxiliary Control Room
73	WBN-1-PNL-278-M003	UNIT CONT. BOARD PNL 1-M-3	Operational	Operational	Main Control Room Panels M-1 through M-6
74	WBN-2-PNL-278-M003	UNIT CONT. BOARD PNL 2-M-3	Operational	Operational	Main Control Room Panels M-1 through M-6
75	WBN-1-PNL-278-M004	UNIT CONT. BOARD PNL 1-M-4	Operational	Operational	Main Control Room Panels M-1 through M-6
76	WBN-2-PNL-278-M004	UNIT CONT. BOARD PNL 2-M-4	Operational	Operational	Main Control Room Panels M-1 through M-6
77	WBN-1-PNL-278-M010	TEMPERATURE MONITORING	Operational	Operational	Main Control Room Panel

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
78	WBN-2-PNL-278-M010	TEMPERATURE MONITORING	Operational	Operational	Main Control Room Panel
79	WBN-1, 2-TANK-18-38,41	7 Day Fuel Oil Sup Dsl Gen	Available	Available	1-TANK-18-38 DG A, 1-TANK-18-41 DG 3B 2-TANK-18-38 DG 3A, 2-TANK-18-41 DG B
80	WBN-1-TANK-063-0046	Refueling Water Storage Tank	Operational	Operational	Cool without SG & RCS inventory
81	WBN-2-TANK-063-0046	Refueling Water Storage Tank	Operational	Operational	Cool without SG & RCS inventory
82	WBN-1-TANK-070-0001	Component Cooling Water Surge Tank	Operational	Operational	Flow path to support SIP lube oil cooler
83	WBN-2-TANK-070-0001	Component Cooling Water Surge Tank	Operational	Operational	Flow path to support SIP lube oil cooler
84	WBN-1-FCV-062-0063-A	CVCS SEAL WATER RETURN HEADER ISOL	Operational	Operational	ECA 0.0 App. A isolate RCP seal return
85	WBN-2-FCV-062-0063-A	CVCS SEAL WATER RETURN HEADER ISOL	Operational	Operational	ECA 0.0 App A isolate RCP seal return
86	WBN-1-FCV-063-0067	Accumulator Isolation Valve 4	Operational	Operational	480V RMOV Bd ESEL Item # 51
87	WBN-2-FCV-063-0067	Accumulator Isolation Valve 4	Operational	Operational	480V RMOV Bd ESEL Item # 52
88	WBN-1-FCV-063-0080	Accumulator Isolation Valve 3	Operational	Operational	480V RMOV Bd ESEL Item # 49

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
89	WBN-2-FCV-063-0080	Accumulator Isolation Valve 3	Operational	Operational	480V RMOV Bd ESEL Item # 50
90	WBN-1-FCV-067-0083	LWR CNTMT A CLRS SUP CIV	Open	Closed	FSI-5.05 Appendix A
91	WBN-1-FCV-063-0098	Accumulator Isolation Valve 2	Operational	Operational	480V RMOV Bd ESEL Item # 51
92	WBN-2-FCV-063-0098	Accumulator Isolation Valve 2	Operational	Operational	480V RMOV Bd ESEL Item # 52
93	WBN-1-FCV-063-0118	Accumulator Isolation Valve 1	Operational	Operational	480V RMOV Bd ESEL Item # 49
94	WBN-2-FCV-063-0118	Accumulator Isolation Valve 1	Operational	Operational	480V RMOV Bd ESEL Item # 50
95	WBN-2-FCV-067-0083	LWR CNTMT A CLRS SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
96	WBN-1-FCV-067-0091	LWR CNTMT C CLRS SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
97	WBN-2-FCV-067-0091	LWR CNTMT C CLRS SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
98	WBN-1-FCV-067-0099	LWR CNTMT B CLRS SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
99	WBN-2-FCV-067-0099	LWR CNTMT B CLRS SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
100	WBN-1-FCV-067-0107	LWR CNTMT D CLRS SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
101	WBN-2-FCV-067-0107	LWR CNTMT D CLRS SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
102	WBN-1-FCV-067-0130	UPR CNTMT CLR A SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
103	WBN-2-FCV-067-0130	UPR CNTMT CLR A SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
104	WBN-1-FCV-067-0133	UPR CNTMT CLR C SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
105	WBN-2-FCV-067-0133	UPR CNTMT CLR C SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
106	WBN-1-FCV-067-0138	UPR CNTMT CLR B SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
107	WBN-2-FCV-067-0138	UPR CNTMT CLR B SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
108	WBN-1-FCV-067-0141	UPR CNTMT CLR D SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
109	WBN-2-FCV-067-0141	UPR CNTMT CLR D SUP CIV	Open	Closed	FSI-5.05 App. A: align ERCW header
110	WBN-2-FCV-067-0143	CCS HX DISCH to HDR B	Open	Closed	FSI-5.05 App. A: align ERCW header
111	WBN-1-FCV-067-0143	CCS HX DISCH to HDR B	Open	Closed	FSI-5.05 App. A: align ERCW header
112	WBN-0-FCV-067-0144	CCS HX C DISCH to HDR A	Operational	Operational	FS1-5.05 step 16
113	WBN-2-FCV-068-0332-B	PRESSURIZER PORV BLOCK VALVE	Open	Open	0-FSI-8, Train B
114	WBN-1-FCV-068-0333	PRESSURIZER PORV BLOCK VALVE	Open	Open	0-FSI-8, Train A
115	WBN-1-FCV-070-0090-A	RC Pump Therm Barrier Ret CNTNMT Isol	Operational	Operational	ECA 0.0 App. A Isolate thermal barrier

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
116	WBN-2-FCV-070-0090-A	RC Pump Therm Barrier Ret CNTNMT Isol	Operational	Operational	ECA 0.0 App. A Isolate thermal barrier
117	WBN-1-FCV-070-0133-A	RC Thermal Barrier Cont Isol Valve	Operational	Operational	ECA 0.0 App. A Isolate thermal barrier
118	WBN-2-FCV-070-0133-A	RC Thermal Barrier Cont Isol Valve	Operational	Operational	ECA 0.0 App. A Isolate thermal barrier
119	WBN-2-LCV-002-0173-B	TD AFW PUMP SG # 2 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.
120	WBN-1-LCV-003-0172-A	TD AFW PUMP SG # 3 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.
121	WBN-2-LCV-003-0172-A	TD AFW PUMP SG # 3 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.
122	WBN-1-LCV-003-0173-B	TD AFW PUMP SG # 2 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
123	WBN-1-LCV-003-0174-B	TD AFW PUMP SG # 1 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.
124	WBN-2-LCV-003-0174-B	TD AFW PUMP SG # 1 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.
125	WBN-1-LCV-003-0175-A	TD AFW PUMP SG # 4 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.
126	WBN-2-LCV-003-0175-A	TD AFW PUMP SG # 4 Level Control	Operational	Operational	Fails open on loss of AC power or control air. Backup N2 supply bottles available. Manual operation with hand wheel is available.
127	WBN-1-PCV-001-0005-T	SG 1Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.
128	WBN-2-PCV-001-0005-T	SG 1Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.
129	WBN-1-PCV-001-0012-T	SG 2 Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
130	WBN-2-PCV-001-0012-T	SG 2 Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.
131	WBN-1-PCV-001-0023-T	SG 3 Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.
132	WBN-2-PCV-001-0023-T	SG 3 Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.
133	WBN-1-PCV-001-0030-T	SG 4Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.
134	WBN-2-PCV-001-0030-T	SG 4Main STM HDR PWR Relief Control Valve	Operational	Operational	Backup N2 supply bottles available; Manual operation with hand wheel is available 0-FSI-7.
135	WBN-2-PCV-068-0334	PRESSURIZER PORV	Closed	Operational	0-FSI-8, 125V DC Vital Battery Board II
136	WBN-1-PCV-068-0340A	PRESSURIZER PORV	Closed	Operational	0-FSI-8, 125V DC Vital Battery Board I
137	WBN-1-SFV-001-0512	Steam Generator #3 Main Steam Safety Valve	Closed	Operational	
138	WBN-2-SFV-001-0512	Steam Generator #3 Main Steam Safety Valve	Closed	Operational	
139	WBN-1-SFV-001-0517	Steam Generator #2 Main Steam Safety Valve	Closed	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
140	WBN-2-SFV-001-0517	Steam Generator #2 Main Steam Safety Valve	Closed	Operational	
141	WBN-1-SFV-001-0522	Steam Generator #1 Main Steam Safety Valve	Closed	Operational	
142	WBN-2-SFV-001-0522	Steam Generator #1 Main Steam Safety Valve	Closed	Operational	
143	WBN-1-SFV-001-0527	Steam Generator #4 Main Steam Safety Valve	Closed	Operational	
144	WBN-2-SFV-001-0527	Steam Generator #4 Main Steam Safety Valve	Closed	Operational	
145	WBN-1-FAN-030-0038	Containment Air Return Fan A-A	Operational	Operational	480V SD Bd A1-A, ESEL # 25.
146	WBN-2-FAN-030-0039	Containment Air Return Fan B-B	Operational	Operational	480V SD Bd B2-B, ESEL # 28
147	WBN-1-EI-235-001/A1	AC OUTPUT AMMETER INVERTER 1-I	Operational	Operational	0-FSI-7. 125V vital battery board voltage
148	WBN-1-BD-235-0001-D	120 V AC Vital Instrument Power Board 1-I	Operational	Operational	
149	WBN-1-EI-235-002/A1	AC OUTPUT AMMETER INVERTER 1-II	Operational	Operational	0-FSI-7. 125V vital battery board voltage

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
150	WBN-1-BD-235-0002-E	120 V AC Vital Instrument Power Board 1-II	Operational	Operational	
151	WBN-1-BD-235-0003-F	120 V AC Vital Instrument Power Board 1-III	Operational	Operational	
152	WBN-1-BD-235-0004-G	120 V AC Vital Instrument Power Board 1-IV	Operational	Operational	
153	WBN-1-CLR-062-0108A-A	CCP 1A-A LUBE OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
154	WBN-1-CLR-062-0108B-A	CCP 1A-A GEAR OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
155	WBN-1-CLR-063-0010	SAFETY INJECTION PUMP 1A-A LUBE OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
156	WBN-1-CLR-072-0027	CNTMT SPRAY PUMP 1A-A OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
157	WBN-1-HTX-074-0010-A	RHR PUMP 1A-A SEAL WATER HEAT EXCHANGER	Operational	Operational	Flow path to support SIP lube oil cooler
158	WBN-1-XS-003-0172A-A	STM GEN #3 TRF SW	Operational	Operational	Auxiliary Control Room panel L11A
159	WBN-1-XS-003-0175A-A	STM GEN #4 TRF SW	Operational	Operational	Auxiliary Control Room panel L11A

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
160	WBN-1-XS-003-0173A-B	STM GEN #2 TRF SW	Operational	Operational	Auxiliary Control Room panel L11B
161	WBN-1-XS-003-0174A-B	STM GEN #1 TRF SW	Operational	Operational	Auxiliary Control Room panel L11B
162	WBN-1-XI-046-57	TURB AFWP DEMAND	Operational	Operational	Main Control Room panel M3
163	WBN-1-FIC-046-0057A-S	AUX FPT FLOW IND CONTROLLER	Operational	Operational	Main Control Room panel M4
164	WBN-1-HS-046-0056A-S	TD AFW PMP Trip/Throttle Valve Handswitch AUTO MAN REMOTE SP FOR FIC-46-57B	Operational	Operational	Main Control Room panel M4
165	WBN-1-SI-046-0056A-S	AFWT A-S SPEED	Operational	Operational	Main Control Room panel M4
166	WBN-1-XI-046-0054A	AFWT A-S MOP POSITION	Operational	Operational	Main Control Room panel M4
167	WBN-1-XI-068-0100	Plasma Display	Operational	Operational	ICCM Train A Unit 1 Main Control Room
168	WBN-1-XS-068-0101	Plasma Display Key Pad	Operational	Operational	ICCM Train A Unit 1 Main Control Room
169	WBN-1-HS-068-340A-A	RCS PRZR PWR RELIEF VALVE	Operational	Operational	Main Control Room panel M5
170	WBN-2-CPU-094-6000	Common Q Operator Module Node Box	Operational	Operational	Common Q Train B unit 2 Main Control Room

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
171	WBN-2-FOC-094-4001A	Common Q first modem	Operational	Operational	Common Q Train B unit 2 Main Control Room
172	WBN-1-HIC-068-397	RX HEAD VENT FLOW CONTROL	Operational	Operational	Main Control Room panel M6
173	WBN-2-HS-063-0010A	SIS PUMP A-A MOTOR	Operational	Operational	Main Control Room panel M6
174	WBN-1-HS-063-0010A	SIS PUMP A-A MOTOR	Operational	Operational	Main Control Room panel M6
175	WBN-1-HS-030-0038A	AIR RET FAN A-A ON/OFF	Operational	Operational	Main Control Room panel M9
176	WBN-2-HS-030-0039B	AIR RET FAN B-B ON/OFF	Operational	Operational	Main Control Room panel M9
177	WBN-2-EI-235-001/A1	AC OUTPUT AMMETER INVERTER 2-I	Operational	Operational	125V Vital Battery Board Voltage
178	WBN-2-BD-235-0001-D	120 V AC Vital Instrument Power Board 2-I	Operational	Operational	
179	WBN-2-BD-235-0002-E	120 V AC Vital Instrument Power Board 2-II	Operational	Operational	
180	WBN-2-EI-235-002/A1	AC OUTPUT AMMETER INVERTER 2-II	Operational	Operational	125V Vital Battery Board Voltage
181	WBN-2-BD-235-0003-F	120 V AC Vital Instrument Power Board 2-III	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
182	WBN-2-BD-235-0004-G	120 V AC Vital Instrument Power Board 2-IV	Operational	Operational	
183	WBN-2-CLR-062-0108 A-A	CCP 2A-A LUBE OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
184	WBN-2-CLR-062-0108B-A	CCP 2A-A GEAR OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
185	WBN-2-CLR-063-0010	SAFETY INJECTION PUMP 2A-A LUBE OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
186	WBN-2-CLR-072-0027	CNTMT SPRAY PUMP 2A-A OIL COOLER	Operational	Operational	Flow path to support SIP lube oil cooler
187	WBN-2-HTX-074-0010-A	RHR PUMP 2A-A SEAL WATER HEAT EXCHANGER	Operational	Operational	Flow path to support SIP lube oil cooler
188	WBN-2-XS-003-0172A-A	STM GEN #3 TRF SW	Operational	Operational	Auxiliary Control Room panel L11A
189	WBN-2-XS-003-0175A-A	STM GEN #4 TRF SW	Operational	Operational	Auxiliary Control Room panel L11A
190	WBN-2-XS-003-0173A-B	STM GEN #2 TRF SW	Operational	Operational	Auxiliary Control Room panel L11B
191	WBN-2-XS-003-0174A-B	STM GEN #1 TRF SW	Operational	Operational	Auxiliary Control Room panel L11B
192	WBN-2-XI-046-57	TURB AFWP DEMAND	Operational	Operational	Main Control Room Panel M3

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
193	WBN-2-FIC-046-0057A-S	AUX FPT FLOW IND CONTROLLER	Operational	Operational	Main Control Room panel M4
194	WBN-2-HS-046-0056A-S	TD AFW PMP Trip/Throttle Valve Handswitch AUTO MAN REMOTE SP FOR FIC-46-57B	Operational	Operational	Main Control Room panel M4
195	WBN-2-SI-046-0056A-S	AFWT A-S SPEED	Operational	Operational	Main Control Room panel M4
196	WBN-2-XI-046-0054A	AFWT A-S MOP POSITION	Operational	Operational	Main Control Room panel M4
197	WBN-2-HS-068-333A	RCS PRZR REL FLOW CONTROL	Operational	Operational	Main Control Room panel M5
198	WBN-2-HIC-068-397	RX HEAD VENT FLOW CONTROL	Operational	Operational	Main Control Room panel M6
199	WBN-2-MON-068-0110	Plasma Touch Screen Display	Operational	Operational	Common Q Train B Unit 2 Main Control Room
200	WBN-2-BD-211-A-A	6.9kV Shutdown Board 2A-A	Operational	Operational	Primary Path OIP Figure A3-25
201	WBN-2-ACUM-063-0001	SIS Accumulator Tank 1	Operational	Operational	
202	WBN-2-ACUM-063-0002	SIS Accumulator Tank 2	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
203	WBN-2-ACUM-063-0003	SIS Accumulator Tank 3	Operational	Operational	
204	WBN-2-ACUM-063-0004	SIS Accumulator Tank 4	Operational	Operational	
205	WBN-1-HIC-068-396	RX HEAD VENT FLOW CONTROL	Operational	Operational	0-FSI-8
206	WBN-1-PNL-099-R2-D	Reactor Protection I Process System	Operational	Operational	
207	WBN-1-PNL-099-R46-A	Solid State Protection System Train A	Operational	Operational	
208	WBN-1-PNL-099-R49-B	Solid State Protection System Train B	Operational	Operational	
209	WBN-1-PNL-099-R6-E	Reactor Protection II Process System	Operational	Operational	
210	WBN-1-PMP-072-0027-A	Containment Spray Pump 1A-A	Operational	Operational	seal water HX in flow path to support SIP oil cooler
211	WBN-2-PI-001-0027D	MAIN STEAM LOOP 4 PRESSURE (typical for each SG)	Operational	Operational	Local Panel 2-L-381
212	WBN-2-HS-046-0056B-S	TD AFW PMP TRIP/THV 2-FCV-1-51 POS CNTL	Operational	Operational	junction box 2238 TDAFWP Room

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
213	WBN-2-PS-002-0321	Pressure Switch to open U2 AOV 2-FCV-3-6386 from AFW Supply Tank upon low pressure in U1 Condensate supply piping.	Operational	Operational	
214	WBN-1, 2-FSV-003-6386	Solenoid valve to open AFW Supply Tank insolation Valve 1,2- FCV-3-6386	Operational	Operational	
215	WBN-1-FT-63-151	Safety Injection Pump Flow	Operational	Operational	FT-63-151 on rack L655 (refer to M6 for FI-63-151)
216	WBN-2-FT-63-20	Safety Injection Pump Flow	Operational	Operational	FT-63-20 on rack L472 (refer to M6 for FI-63-20)
217	WBN-1-PI-001-0027D	MAIN STEAM LOOP 4 PRESSURE (typical for each SG)	Operational	Operational	Typical for each steam generator. Local Panel L-381, ESEL # 247 and 248.
218	WBN-1-HS-046-0056B-S	TD AFW PMP TRIP/THV 1-FCV-1-51 POS CNTL	Operational	Operational	junction box 2238 TDAFWP Room
219	WBN-0-SW-360-0103C, 203C	Fuel Oil XFR Pump Disconnect Switch	Standby	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
220					Not used
221	WBN-0-PMP-360-103, 203	Fuel Oil System Transfer Pump	Standby	Operational	
222	WBN-0-LIT-003-227	Level Indicating Transmitter for the AFW Supply Tank and High/Low Level Alarms	Operational	Operational	Yard - AFW Supply Tank Valve Vault
223	WBN-0-FU1-360-0103A	Primary Cntrl Fuse for Fuel Oil Pump A Starter	Standby	Operational	0-SW-360-0003A/1
224	WBN-0-FU1-360-0103B	Secondary Cntrl Fuse for Fuel Oil Pump A Starter	Standby	Operational	0-SW-360-0003A/1
225	WBN-0-FU1-360-0103C	Primary Cntrl Fuse for Fuel Oil Pump A Starter	Standby	Operational	0-SW-360-0003A/1
226	WBN-0-FUDS-360-FP/AM	480 V FLEX Main Panel A - Main - Disconnect	Standby	Operational	PNL-360FP/A
227	WBN-0-FUDS-360-FP/BM	480 v FLEX Main Panel B - Main - Disconnect	Standby	Operational	PNL-360FP/B
228	WBN-0-XSW-236-0004-S	480v AC Vital Transfer Switch IV	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
229	WBN-0-XSW-236-0003-S	480v AC Vital Transfer Switch III	Operational	Operational	
230	WBN-0-XSW-236-0002-S	480v AC Vital Transfer Switch II	Operational	Operational	
231	WBN-0-XSW-236-0001-S	480v AC Vital Transfer Switch I	Operational	Operational	
232	WBN-0-GNGC-360-DG/A, B	480 V FLEX DG Neutral Grounding Resistor Box	Standby	Operational	
233	WBN-0-BKR-360-DG/A, B	480 V FLEX DG - Circuit Breaker	Standby	Operational	
234	WBN-1-HTR-268-various	Hydrogen Igniters Group A - 34 igniters	Operational	Operational	1-SI-268-1-A lists locations of igniters
235	WBN-2-HTR-268-various	Hydrogen Igniters Group B - 34 igniters	Operational	Operational	2-SI-268-1-B lists locations of igniters
236	WBN-0-RFV-003-0005	Conservation vent valve for the AFW Supply Tank.	Operational	Operational	
237	WBN-1-FCV-001-0052	TD Aux Feedwater Pmp Governor Valve	Operational	Operational	
238	WBN-2-FCV-001-0052	TD Aux Feedwater Pmp Governor Valve	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
239	WBN-0-PI-003-1	Pressure indicator for the AFW Supply Tank	Operational	Operational	Yard - AFW Supply Tank Valve Vault
240	WBN-1-PS-002-0320	Pressure Switch to open U1 AOV 1-FCV-3-6386 from AFW Supply Tank upon low pressure in U1 Condensate supply piping.	Operational	Operational	
241	WBN-0-BD-360-0003A, 3B	3MW Diesel Generator 6.9KV Switchgear	Standby	Operational	3A Primary U1, 3B Primary U2 OIP Figure A3-24 and 26. 3A Primary U1 and U2 OIP figure A3-25.
242	WBN-2-DXF-268-0002-B	Hydrogen Mitigation Transformer	Operational	Operational	C&A VT BD 2B1-B, ESEL # 54
243	WBN-1-DXF-268-0001-A	Hydrogen Mitigation Transformer	Operational	Operational	C&A VT BD 1A1-A, ESEL # 53
244	WBN-0-DXF-360-DG/AP, BP	480 V FLEX DG 2 KVA Sealed XFMR	Standby	Operational	
245	WBN-0-XFMR-360-3A/1, 3B/1	6900V 3MW FLEX Diesel GEN 20 KVA Dry Type Transformer	Standby	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
246	WBN-0-XFMR-360-3A/2, 3B/2	6900V 3MW FLEX Diesel GEN 5 KVA Dry Type Transformer	Standby	Operational	
247	WBN-1-PNL-276-L381	TDAFWP Control Panel	Operational	Operational	
248	WBN-2-PNL-276-L381	TDAFWP Control Panel	Operational	Operational	
249	WBN-0-PNL-360-DG/A, B1	Fuel Oil Transfer Pump Control Panel	Standby	Operational	
250	WBN-0-XSW-236-0001A-S	125V Vital Batt CHGR I 480 V FLEX Transfer Switch	Standby	Operational	OIP Figure A3-22
251	WBN-0-XSW-236-0002A-S	125V Vital Batt CHGR 2 480 V FLEX Transfer Switch	Standby	Operational	OIP Figure A3-22
252	WBN-0-XSW-236-0003A-S	125V Vital Batt CHGR 3 480 V FLEX Transfer Switch	Standby	Operational	OIP Figure A3-22
253	WBN-0-XSW-236-0004A-S	125V Vital Batt CHGR 4 480 V FLEX Transfer Switch	Standby	Operational	OIP Figure A3-22
254	WBN-0-PNL-360-FP/A	480 V FLEX Fuse Panel A	Standby	Operational	OIP Figure A3-22

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
255	WBN-0-PNL-360-FP/B	480 V FLEX Fuse Panel B	Standby	Operational	~~OIP Figure A3-22~~
256	WBN-1-PNL-276-L326-S	AUX FW TURBINE SPEED CONTROL PANEL	Operational	Operational	
257	WBN-2-PNL-276-L326-S	AUX FW TURBINE SPEED CONTROL PANEL	Operational	Operational	
258	WBN-0-RES-360-003A, 3B	3MW Diesel Generator Neutral Grounding Resistor	Standby	Operational	
259	WBN-1-PNL-276-L381A	AUX FEEDWATER CONTROL	Operational	Operational	
260	WBN-2-PNL-276-L381A	AUX FEEDWATER CONTROL	Operational	Operational	
261	WBN-0-XSW-360-HPCS	FLEX COMMON SPARE HP PUMP TRANSFER SWITCH	Standby	Operational	
262	WBN-1-XSW-82-A	DG 1A-A Transfer Switch TO 6.9KV SD BD 1A-A	Operational	Operational	Kirk-key, EDG XFSW 1A-A Primary Path OIP Figure A3-24, 25, 26 Walkdown ID for this UNID is WBN-1-XSW-82-A/2-A
263	WBN-2-XSW-82-A	DG 2A-A Transfer Switch TO 6.9KV SD BD 2A-A	Operational	Operational	Kirk-key, EDG XSW 2A-A Primary Path OIP Figure A3-25 Walkdown ID for this UNID is WBN-2-XSW-82-A/2-A

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
264	WBN-1-XSW-82-B	DG 1B-B Transfer SwitchDG C-S to SD BD 1B-B	Operational	Operational	Kirk-key
265	WBN-2-XSW-82-B	DG 2B-B Transfer SwitchDG C-S to SD BD 2B-B	Operational	Operational	Kirk-key, EDG XFSW 2B-B Primary Path OIP Figure A3-25 and 26
266	WBN-0-FUDS-360-DG/AP2, BP2	480 V FLEX DG Pump - Disconnect Switch	Standby	Operational	
267	WBN-0-STR-360-0103, 203	3MW FLEX Diesel GEN PMP Starter	Standby	Operational	
268	WBN-0-SW-360-0003A/1, 3B/1	6900V 3MW FLEX Diesel GEN Fused Disconnect Switch	Standby	Operational	
269	WBN-1-TE-068-0380-E	Reactor Level Cap tube Temp Comp	Operational	Operational	Common Q Train B Unit 2
270	WBN-2-PNL-276-L340	Reactor Vessel instrumentation System II Panel	Operational	Operational	
271	WBN-1-PNL-276-L388	Reactor Vessel instrumentation System I Panel	Operational	Operational	
272	WBN-2-TE-068-0380-E	Reactor Level Cap tube Temp Comp	Operational	Operational	Common Q Train B Unit 2

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
273	WBN-0-LI-3-227	AFW Supply Tank Level Indicator	Operational	Operational	
274	WBN-1-LI-63-51	RWST Level	Operational	Operational	LT-63-51 on rack L435 (refer to M6 for LI-63-51)
275	WBN-2-LI-63-51	RWST Level	Operational	Operational	LT-63-51 on rack L435 (refer to M6 for LI-63-51)
276	WBN-1-LPF-3-142	TDAFW Pump Flow	Operational	Operational	FT-3-142 on rack L656 (refer to M4 for FI-3-142)
277	WBN-2-LPF-3-142	TDAFW Pump Flow	Operational	Operational	FT-3-142 on rack L215 (refer to M4 for FI-3-142)
278	WBN-1-LPF-3-147B	AFW Flow S/G 3	Operational	Operational	FT-3-147 on rack L341 (refer to M3 for FI-3-147)
279	WBN-2-LPF-3-147B	AFW Flow S/G 3	Operational	Operational	FT-3-147 on rack L912 (refer to M3 for FI-3-147)
280	WBN-1-LPF-3-155A	AFW Flow S/G 2	Operational	Operational	FT-3-155 on rack L217 (refer to M3 for FI-3-155)
281	WBN-2-LPF-3-155A	AFW Flow S/G 2	Operational	Operational	FT-3-155 on rack L193 (refer to M3 for FI-3-155)
282	WBN-1-LPF-3-163B	AFW Flow S/G 1	Operational	Operational	FT-3-163 on rack L654 (refer to M3 for FI-3-163)
283	WBN-2-LPF-3-163B	AFW Flow S/G 1	Operational	Operational	FT-3-163 on rack L654 (refer to M3 for FI-3-163)
284	WBN-1-LPF-3-170A	AFW Flow S/G 4	Operational	Operational	FT-3-170 on rack L216 (refer to M3 for FI-3-170)
285	WBN-2-LPF-3-170A	AFW Flow S/G 4	Operational	Operational	FT-3-170 on rack L216 (refer to M3 for FI-3-170)
286	WBN-1-LPL-3-111	S/G WR Level Loop 4	Operational	Operational	LT-3-111 on rack L183 (refer to M4 for LI-3-111)

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
287	WBN-2-LPL-3-111	S/G WR Level Loop 4	Operational	Operational	LT-3-111 on rack L183 (refer to M4 for LI-3-111)
288	WBN-1-LPL-3-148	S/G NR Level Loop 3	Operational	Operational	LT-3-148 on rack L182 (refer to M3 for LI-3-148)
289	WBN-2-LPL-3-148	S/G NR Level Loop 3	Operational	Operational	LT-3-148 on rack L182 (refer to M3 for LI-3-148)
290	WBN-1-LPL-3-156	S/G NR Level Loop 2	Operational	Operational	LT-3-156 on rack L597 (refer to M3 for LI-3-148)
291	WBN-2-LPL-3-156	S/G NR Level Loop 2	Operational	Operational	LT-3-156 on rack L597 (refer to M3 for LI-3-148)
292	WBN-1-LPL-3-164	S/G NR Level Loop 1	Operational	Operational	LT-3-164 on rack L183 (refer to M3 for LI-3-164)
293	WBN-2-LPL-3-164	S/G NR Level Loop 1	Operational	Operational	LT-3-164 on rack L183 (refer to M3 for LI-3-164)
294	WBN-1-LPL-3-171	S/G NR Level Loop 4	Operational	Operational	LT-3-171 on rack L183 (refer to M3 for LI-3-171)
295	WBN-2-LPL-3-171	S/G NR Level Loop 4	Operational	Operational	LT-3-171 on rack L183 (refer to M3 for LI-3-171)
296	WBN-1-LPL-3-43	S/G WR Level Loop 1	Operational	Operational	LT-3-43 on rack L183 (refer to M4 for LI-3-43)
297	WBN-2-LPL-3-43	S/G WR Level Loop 1	Operational	Operational	LT-3-43 on rack L183 (refer to M4 for LI-3-43)
298	WBN-1-LPL-3-56	S/G WR Level Loop 1	Operational	Operational	LT-3-56 on rack L182 (refer to M4 for LI-3-56)
299	WBN-2-LPL-3-56	S/G WR Level Loop 2	Operational	Operational	LT-3-56 on rack L182 (refer to M4 for LI-3-56)
300	WBN-1-LPL-3-98	S/G WR Level Loop 3	Operational	Operational	LT-3-98 on rack L182 (refer to M4 for LI-3-98)

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
301	WBN-2-LPL-3-98	S/G WR Level Loop 3	Operational	Operational	LT-3-98 on rack L182 (refer to M4 for LI-3-98)
302	WBN-1-LPL-68-335	PZR Level	Operational	Operational	LT-68-335 on rack L660(refer to M4 for LI-68-335)
303	WBN-2-LPL-68-335	PZR Level	Operational	Operational	LT-68-335 on rack L660 (refer to M4 for LI-68-335)
304	WBN-0-LPL-78-42	SFP Level	Operational	Operational	LT-78-42 on rack L945 (refer to 2M10 for LI-78-42)
305	WBN-1-LPN-92-131	Nuclear Flux	Operational	Operational	detector through amplifier and optical isolator to indicator on M-13
306	WBN-2-LPN-92-132	Nuclear Flux	Operational	Operational	detector through amplifier and optical isolator to indicator on M-13
307	WBN-1-LPP-1-20A	S/G Pressure Loop 3	Operational	Operational	PT-1-20 on rack L194 (refer to M4 for PI-1-20)
308	WBN-2-LPP-1-20A	S/G Pressure Loop 3	Operational	Operational	PT-1-20 on rack L194 (refer to M4 for PI-1-20)
309	WBN-1-LPP-1-27B	S/G Pressure Loop 4	Operational	Operational	PT-1-27 on rack L700 (refer to M4 for PI-1-27)
310	WBN-2-LPP-1-27B	S/G Pressure Loop 4	Operational	Operational	PT-1-27 on rack L196 (refer to M4 for PI-1-27)
311	WBN-1-LPP-1-2A	S/G Pressure Loop 1	Operational	Operational	PT-1-2 on rack L196 (refer to M4 for PI-1-2)
312	WBN-2-LPP-1-2A	S/G Pressure Loop 1	Operational	Operational	PT-1-2 on rack L196 (refer to M4 for PI-1-2)
313	WBN-1-LPP-1-9A	S/G Pressure Loop 2	Operational	Operational	PT-1-9 on rack L697 (refer to M4 for PI-1-9)
314	WBN-2-LPP-1-9A	S/G Pressure Loop 2	Operational	Operational	PT-1-9 on rack L194 (refer to M4 for PI-1-9)

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
315	WBN-1-LPP-68-68	RCS WR Pressure	Operational	Operational	PT-68-68 on rack L384 (refer to M6 for PT-68-68)
316	WBN-2-LPP-68-66	RCS WR Pressure	Operational	Operational	PT-68-66 on rack L360 (refer to M6 for PT-68-66A)
317	WBN-1-LPPD-30-310	Containment Pressure	Operational	Operational	PT-30-310 on rack L188 (refer to M9 for PI-30-310)
318	WBN-2-LPPD-30-310	Containment Pressure	Operational	Operational	PT-30-310 on rack L188 (refer to M9 for PI-30-310)
319	WBN-1-LPT-30-1032	Containment Temperature	Operational	Operational	PNL-R143 (refer to M6 for TI-30-1032)
320	WBN-2-LPT-30-1032	Containment Temperature	Operational	Operational	PNL-R143 (refer to M6 for TI-30-1032)
321	WBN-1-LPT-68-1	RCS WR T_{hot} Loop 1	Operational	Operational	PNL-099-R2 (refer to M5 for TI-68-1)
322	WBN-2-LPT-68-1	RCS WR T_{hot} Loop 1	Operational	Operational	PNL-099-R2 (refer to M5 for TI-68-1)
323	WBN-1-LPT-68-18	RCS WR T_{cold} Loop 1	Operational	Operational	PNL-099-R2 (refer to M5 for TI-68-18)
324	WBN-2-LPT-68-18	RCS WR T_{cold} Loop 1	Operational	Operational	PNL-099-R2 (refer to M5 for TI-68-18)
325	WBN-1-LPT-68-41	RCS WR T_{cold} Loop 2	Operational	Operational	PNL-099-R2 (refer to M5 for TI-68-41)
326	WBN-2-LPT-68-41	RCS WR T_{cold} Loop 2	Operational	Operational	PNL-099-R2 (refer to M5 for TI-68-41)
327	WBN-1-LPT-68-60	RCS WR T_{cold} Loop 3	Operational	Operational	PNL-099-R6 (refer to M5 for TI-68-60)
328	WBN-2-LPT-68-60	RCS WR T_{cold} Loop 3	Operational	Operational	PNL-099-R6 (refer to M5 for TI-68-60)

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
329	WBN-1-LPT-68-83	RCS WR T_{cold} Loop 4	Operational	Operational	PNL-099-R6 (refer to M5 for TI-68-83)
330	WBN-2-LPT-68-83	RCS WR T_{cold} Loop 4	Operational	Operational	PNL-099-R6 (refer to M5 for TI-68-83)
331	WBN-1-PNL-276-L1000	PORV AND AFW-LCV STM GEN 3 & 4 PNL	Operational	Operational	FLEX Nitrogen Control Station
332	WBN-2-PNL-276-L1000	PORV AND AFW-LCV STM GEN 3 & 4 PNL	Operational	Operational	FLEX Nitrogen Control Station
333	WBN-1-PNL-276-L1001	PORV AND AFW-LCV STM GEN 1 & 2 PNL	Operational	Operational	FLEX Nitrogen Control Station
334	WBN-2-PNL-276-L1001	PORV AND AFW-LCV STM GEN 1 & 2 PNL	Operational	Operational	FLEX Nitrogen Control Station
335	WBN-1-PNL-094-0008A-J	Incore Thermocouple Mon Sys Jbox			ICCM Train A Unit 1
336	WBN-1-PNL-094-0008B-J	Incore Thermocouple Mon Sys Jbox			ICCM Train B Unit 1
337	WBN-0-DPL-360-0003A/1, 3B/1	480-Volt Distribution Panel	Standby	Operational	
338	WBN-0-DPL-360-0003A/2, 3B/2	120/240 VAC Panel board	Standby	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
339	WBN-2-DPL-268-0002-B	Hydrogen Mitigation Distribution Panel	Operational	Operational	
340	WBN-1-DPL-268-0001-A	Hydrogen Mitigation Distribution Panel	Operational	Operational	
341	WBN-0-FUSD-360-DG/AP1, BP1	480 V FLEX DG Pump Fusible Disc Switch	Standby	Operational	
342	WBN-0-DG-360-000A, 000B	480V FLEX/ESBO 225 KVA Diesel Generator	Standby	Operational	DG A Primary to Battery Boards 1 and 3 DG B Primary to Battery Boards 2 and 4; OIP fig A3-22.
343	WBN-0-DG-360-0003A, 3B	6900V 3MW Diesel Generator	Standby	Operational	3A Primary U1, 3B Primary U2 OIP Figure A3-24, 26. 3A primary U1 and U2 OIP Figure A3-25.
344	WBN-1-PMP-003-0001A-S	TD Aux Feedwater Pump 1A-S	Operational	Operational	Automatic start on LOOP
345	WBN-2-PMP-003-0002A-S	TD Aux Feedwater Pump 2A-S	Operational	Operational	Automatic start on LOOP
346	WBN-0-PMP-360-DG/A1, B1	Fuel Oil Transfer Pump	Standby	Operational	
347	WBN-1-PMP-360-HP01	HP FLEX Pump	Standby	Operational	OIP Figure A3-23.
348	WBN-2-PMP-360-HP01	HP FLEX Pump	Standby	Operational	OIP Figure A3-23.

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
349	WBN-1-PMP-360-IP01	FLEX IP PUMP 01	Standby	Operational	OIP Figure A3-4, A3-23.
350	WBN-2-PMP-360-IP01	FLEX IP PUMP 01	Standby	Operational	OIP Figure A3-4, A3-23
351	WBN-1-PMP-360-IP02	FLEX IP PUMP 02	Standby	Operational	OIP Figure A3-11, Mode 5 & 6 RCS Makeup. OIP Figure A3-23
352	WBN-2-PMP-360-IP02	FLEX IP PUMP 02	Standby	Operational	OIP Figure A3-11. Mode 5 & 6 RCS Makeup OIP Figure A3-23.
353	WBN-1-FCV-003-6386	FCV SHARED AFW TANK OUTLET PIPE TO U1 CONDENSATE	Closed	Open	
354	WBN-2-FCV-003-6386	FCV FOR AFW Supply Tank Outlet Piping to U2 Condensate	Closed	Open	
355	WBN-0-FCV-070-0194-B	SFP HEAT EXCHANGER B CCS SUPPLY	Operational	Operational	Boundary Valve for Flow path to support SIP lube oil cooler
356	WBN-0-FCV-070-0197-A	SFP HEAT EXCHANGER A CCS SUPPLY	Operational	Operational	Boundary Valve for Flow path to support SIP lube oil cooler
357	WBN-0-FCV-067-0205	Sta Ser & Cntl Air Cmpr Supply Hdr A Isol valve	Open	Closed	FSI-5.05 Appendix A align ERCW header

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
358	WBN-0-FCV-067-0208	Sta Ser & Cntl Air Cmpr Supply Hdr B Isol valve	Open	Closed	FSI-5.05 Appendix A align ERCW header
359	WBN-1-FCV-001-051	TD Aux Feedwater Pmp Trip & Throttle Valve	Operational	Operational	normal power supply: 125V Vital Battery Board III
360	WBN-2-FCV-001-051	TD Aux Feedwater Pmp Trip & Throttle Valve	Operational	Operational	normal power supply: 125V Vital Battery Board I
361	WBN-2-FCV-003-0179A-B	ERCW Header B TD AFW PMP SUCT (PS-144)	Operational	Operational	switchover to ERCW header. 480V RMOV BD 2B2-B or handwheel
362	WBN-2-FCV-003-0136A-A	ERCW Header A TD AFW PMP SUCT (PS-139)	Operational	Operational	switchover to ERCW header. 480V RMOV BD 2A2-A or handwheel
363	WBN-2-FCV-003-0136B-A	ERCW Header A TD AFW PMP SUCT	Operational	Operational	switchover to ERCW header. 480V RMOV BD 2A2-A or handwheel
364	WBN-2-FCV-003-0179B-B	ERCW Header B TD AFW PMP SUCT	Operational	Operational	switchover to ERCW header. 480V RMOV BD 2B2-B or handwheel
365	WBN-1-FCV-003-0136A-A	ERCW Header A TD AFW PMP SUCT (PS-139)	Operational	Operational	switchover to ERCW header. 480V RMOV BD 1A2-A or handwheel
366	WBN-1-FCV-003-0136B-A	ERCW Header A TD AFW PMP SUCT	Operational	Operational	switchover to ERCW header. 480V RMOV BD 1A2-A or handwheel

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
367	WBN-1-FCV-003-0179A-B	ERCW Header B TD AFW PMP SUCT (PS-144)	Operational	Operational	switchover to ERCW header. 480V RMOV BD 1B2-B or handwheel
368	WBN-1-FCV-003-0179B-B	ERCW Header B TD AFW PMP SUCT	Operational	Operational	switchover to ERCW header. 480V RMOV BD 1B2-B or handwheel
369	WBN-1-FCV-067-0147A	CCS HX C SUP FROM HDR 1A	Admin locked closed	Open	FSI-5.05 Appendix A align ERCW header
370	WBN-1-FCV-067-0458A	CCS HX C SUP FROM HDR 1B	Admin locked closed	Open	FSI-5.05 Appendix A align ERCW header
371	WBN-1-TANK-3-0402A	N2 TANK NO. 1 SUPPLY TO 1-LCV-003-0173-B	Operational	Operational	
372	WBN-1-TANK-001-0405A	N2 TANK NO. 1 SUP TO 1-PCV-001-0012-B	Operational	Operational	
373	WBN-2-TANK-001-0405A	N2 TANK NO. 1 SUP TO 2-PCV-001-0012-B	Operational	Operational	
374	WBN-1-TANK-001-0405B	N2 TANK NO. 2 SUP TO 1-PCV-001-0012-B	Operational	Operational	
375	WBN-2-TANK-001-0405B	N2 TANK NO. 2 SUP TO 2-PCV-001-0012-B	Operational	Operational	
376	WBN-1-TANK-001-0406A	N2 TANK NO. 1 SUP TO 1-PCV-001-0030-B	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
377	WBN-2-TANK-001-0406A	N2 TANK NO. 1 SUP TO 2-PCV-001-0030-B	Operational	Operational	
378	WBN-1-TANK-001-0406B	N2 TANK NO. 2 SUP TO 1-PCV-001-0030-B	Operational	Operational	
379	WBN-2-TANK-001-0406B	N2 TANK NO. 2 SUP TO 2-PCV-001-0030-B	Operational	Operational	
380	WBN-1-TANK-001-0407A	N2 TANK NO. 1 SUP TO 1-PCV-001-0023-A	Operational	Operational	
381	WBN-2-TANK-001-0407A	N2 TANK NO. 1 SUP TO 2-PCV-1-0023-A	Operational	Operational	
382	WBN-1-TANK-001-0407B	N2 TANK NO. 2 SUP TO 1-PCV-001-0023-A	Operational	Operational	
383	WBN-2-TANK-001-0407B	N2 TANK NO. 2 SUP TO 2-PCV-1-0023-A	Operational	Operational	
384	WBN-1-TANK-001-0408A	N2 TANK NO. 1 SUP TO 1-PCV-001-0005-A	Operational	Operational	
385	WBN-2-TANK-001-0408A	N2 TANK NO. 1 SUP TO 2-PCV-001-0005-A	Operational	Operational	
386	WBN-1-TANK-001-0408B	N2 TANK NO. 2 SUP TO 1-PCV-001-0005-A	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
387	WBN-2-TANK-001-0408B	N2 TANK NO. 1 SUP TO 2-PCV-001-0005-A	Operational	Operational	
388	WBN-2-TANK-3-0402A	N2 TANK NO. 1 SUPPLY TO 2-LCV-003-0173-B	Operational	Operational	
389	WBN-1-TANK-3-0402B	N2 TANK NO. 2 SUPPLY TO 1-LCV-003-0173-B	Operational	Operational	
390	WBN-2-TANK-3-0402B	N2 TANK NO. 2 SUPPLY TO 2-LCV-003-0173-B	Operational	Operational	
391	WBN-1-TANK-3-0402C	N2 TANK NO. 1 SUPPLY TO 1-LCV-003-0174-B	Operational	Operational	
392	WBN-2-TANK-3-0402C	N2 TANK NO. 1 SUPPLY TO 2-LCV-003-0174-B	Operational	Operational	
393	WBN-1-TANK-3-0402D	N2 TANK NO. 2 SUPPLY TO 1-LCV-003-0174-B	Operational	Operational	
394	WBN-2-TANK-3-0402D	N2 TANK NO. 2 SUPPLY TO 2-LCV-003-0174-B	Operational	Operational	
395	WBN-1-TANK-3-0403A	N2 TANK NO. 1 SUP TO 1-LCV-003-0172-A	Operational	Operational	
396	WBN-2-TANK-3-0403A	N2 TANK NO. 1 SUP TO 2-LCV-3-172-A	Operational	Operational	

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
397	WBN-1-TANK-3-0403B	N2 TANK NO. 2 SUP TO 1-LCV-003-172-A	Operational	Operational	
398	WBN-2-TANK-3-0403B	N2 TANK NO. 2 SUP TO 2-LCV-3-172-A	Operational	Operational	
399	WBN-1-TANK-3-0403C	N2 TANK NO. 1 SUP TO 1-LCV-003-0175-A	Operational	Operational	
400	WBN-2-TANK-3-0403C	N2 TANK NO. 1 SUP TO 2-LCV-3-175-A	Operational	Operational	
401	WBN-1-TANK-3-0403D	N2 TANK NO. 2 SUP TO 1-LCV-003-0175-A	Operational	Operational	
402	WBN-2-TANK-3-0403D	N2 TANK NO. 2 SUP TO 2-LCV-3-175-A	Operational	Operational	
403	WBN-0-TANK-003-0226	AFW Supply Tank 500,000 gallons	Operational	Operational	
404	WBN-0-TANK-360-113, 213	6900V 3MW FLEX DG Fuel Oil Storage Tank	Standby	Operational	
405	WBN-1-CLR-003-0001-B	TD Aux FW PMP Oil Cooler	Operational	Operational	
406	WBN-2-CLR-003-0001-B	TD Aux FW PMP Oil Cooler	Operational	Operational	
407	WBN-2-RLY-046-0057-S	Transfer Sw in Aux Pos Isol Rly	Operational	Operational	T351/Tyco-Potter & Brumfield

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
408	WBN-2-RLY-046-B002/1-S	B2-1 Relay AFPT Trip & Throttle Vlv Photo Iso	Operational	Operational	Struthers Dunn
409	WBN-2-RLY-046-B002/2-S	B2-2 Relay AFPT Trip & Throttle Vlv Photo Iso	Operational	Operational	Struthers Dunn
410	WBN-2-RLY-046-B002/3-S	B2-3 Relay AFPT Speed Control Instr Pwr	Operational	Operational	P297/Potter & Brumfield
411	WBN-2-RLY-046-BA-S	BA & BB Relay AFPT Speed Control Buffer Relay	Operational	Operational	A160/Allen-Bradley Co.
412	WBN-2-RLY-046-BA1-S	BA1 Relay AFPT Speed Control Buffer	Operational	Operational	A160/Allen-Bradley Co.
413	WBN-2-RLY-046-BB-S	BA & BB Relay AFPT Speed Control Buffer Relay	Operational	Operational	A160/Allen-Bradley Co.
414	WBN-2-RLY-046-R/A-A	Aux FW Pump Vlv Sep Relay	Operational	Operational	W120/Westinghouse Elec Corp.
415	WBN-2-RLY-046-R/B-B	Aux FW Pump Vlv Sep Relay	Operational	Operational	W120/Westinghouse Elec Corp.
416	WBN-2-RLY-046-R1-S	AFPT ACC Reset Relay	Operational	Operational	A160/Allen-Bradley Co.
417	WBN-2-RLY-046-R2-S	AFPT ACC Reset Relay	Operational	Operational	A160/Allen-Bradley Co.

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
418	WBN-2-RLY-046-R4-A	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay TR A	Operational	Operational	Allen-Bradley Co.
419	WBN-2-RLY-046-R5-A	Aux Feed Pump Trb Stm Supply Xfer Sep Relay TR A	Operational	Operational	Agastat
420	WBN-2-RLY-046-RA1-A	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay	Operational	Operational	W120/Westinghouse Elec Corp.
421	WBN-2-RLY-046-RA2-A	Turb/Mtr Driven Aux FW Pump Vlv SSEP Relay	Operational	Operational	W120/Westinghouse Elec Corp.
422	WBN-2-RLY-046-RAS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-156 & 164	Operational	Operational	W120/Westinghouse Elec Corp.
423	WBN-2-RLY-046-RB1-B	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay	Operational	Operational	W120/Westinghouse Elec Corp.
424	WBN-2-RLY-046-RB2-B	Turb Driven Aux FW Pump Vlv SEP Relay	Operational	Operational	W120/Westinghouse Elec Corp.
425	WBN-2-RLY-046-RBS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-171 & 148	Operational	Operational	W120/Westinghouse Elec Corp.

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
426	WBN-2-RLY-046-SST-S	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay	Operational	Operational	A160/Allen-Bradley Co.
427	WBN-1-RLY-046-0057-S	Transfer Sw in Aux Pos Isol Rly	Operational	Operational	T351/Tyco-Potter & Brumfield
428	WBN-1-RLY-046-B002/1-S	B2-1 Relay AFPT Trip & Throttle Vlv Photo Iso	Operational	Operational	Struthers Dunn
429	WBN-1-RLY-046-B002/2-S	B2-2 Relay AFPT Trip & Throttle Vlv Photo Iso	Operational	Operational	Struthers Dunn
430	WBN-1-RLY-046-B002/3-S	B2-3 Relay AFPT Speed Control Instr Pwr	Operational	Operational	P297/Potter & Brumfield
431	WBN-1-RLY-046-BA-S	BA & BB Relay AFPT Speed Control Buffer Relay	Operational	Operational	A160/Allen-Bradley Co.
432	WBN-1-RLY-046-BA1-S	BA1 Relay AFPT Speed Control Buffer	Operational	Operational	A160/Allen-Bradley Co.
433	WBN-1-RLY-046-BB-S	BA & BB Relay AFPT Speed Control Buffer Relay	Operational	Operational	A160/Allen-Bradley Co.
434	WBN-1-RLY-046-R/A-A	Aux FW Pump Vlv Sep Relay	Operational	Operational	W120/Westinghouse Elec Corp.
435	WBN-1-RLY-046-R/B-B	Aux FW Pump Vlv Sep Relay	Operational	Operational	W120/Westinghouse Elec Corp.

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
436	WBN-1-RLY-046-R1-S	AFPT ACC Reset Relay	Operational	Operational	A160/Allen-Bradley Co.
437	WBN-1-RLY-046-R2-S	AFPT ACC Reset Relay	Operational	Operational	A160/Allen-Bradley Co.
438	WBN-1-RLY-046-R4-A	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay TR A	Operational	Operational	Allen-Bradley Co.
439	WBN-1-RLY-046-R5-A	Aux Feed Pump Trb Stm Supply Xfer Sep Relay TR A	Operational	Operational	Agastat
440	WBN-1-RLY-046-RA1-A	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay	Operational	Operational	W120/Westinghouse Elec Corp.
441	WBN-1-RLY-046-RA2-A	Turb/Mtr Driven Aux FW Pump Vlv SSEP Relay	Operational	Operational	W120/Westinghouse Elec Corp.
442	WBN-1-RLY-046-RAS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-156 & 164	Operational	Operational	W120/Westinghouse Elec Corp.
443	WBN-1-RLY-046-RB1-B	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay	Operational	Operational	W120/Westinghouse Elec Corp.
444	WBN-1-RLY-046-RB2-B	Turb Driven Aux FW Pump Vlv SEP Relay	Operational	Operational	W120/Westinghouse Elec Corp.

ESEL Item #	UNID	Description	Equipment State		Notes/Comments
			Normal State	Desired State	
445	WBN-1-RLY-046-RBS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-171 & 148	Operational	Operational	W120/Westinghouse Elec Corp.
446	WBN-1-RLY-046-SST-S	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay	Operational	Operational	A160/Allen-Bradley Co.
447	WBN-1-STR-046-0056A-S	TDAFW Trip/Throttle Motor Starter	Operational	Operational	
448	WBN-2-STR-046-0056A-S	TDAFW Trip/Throttle Motor Starter	Operational	Operational	
449	WBN-1-FSV-068-0394	Reactor Vessel Head Vent Isol	Operational	Operational	125v DC Vital Battery Bd I
450	WBN-1-FSV-068-0397	RV HV Throttle Valve	Operational	Operational	125v DC Vital Battery Bd I
451	WBN-2-FSV-068-0395	RV HV Isolation Valve	Operational	Operational	125v DC Vital Battery Bd II
452	WBN-2-FSV-068-0396	RV HV Throttle Valve	Operational	Operational	125v DC Vital Battery Bd II

ATTACHMENT B --ESEP HCLPF VALUES AND FAILURE MODES TABULATION FOR WATTS BAR NUCLEAR PLANT

Table B-1: ESEP HCLPF VALUES AND FAILURE MODES FOR WATTS BAR NUCLEAR PLANT

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
1	WBN-1-PNL-099-R48-A	Solid State Protection System Train A		Screened	> 0.5
2	WBN-2-PNL-099-R50-B	Solid State Protection System Train B		Screened	> 0.5
3	WBN-2-PNL-099-R2-D	Reactor Protection I Process System		Screened	> 0.5
4	WBN-2-PNL-099-R48-A	Solid State Protection System Train A		Screened	> 0.5
5	WBN-1-PNL-099-R50-B	Solid State Protection System Train B		Screened	> 0.5
6	WBN-2-PNL-099-R6-E	Reactor Protection II Process System		Screened	> 0.5
7	WBN-1-PNL-275-R179-A	ICCM System Train A CH 1		Screened	> 0.5
8	WBN-2-PNL-275-R179-A	Common Q PAMS Panel Train A		Screened	> 0.5
9	WBN-1-PNL-275-R180-B	ICCM System Train B CH 2		Screened	> 0.5
10	WBN-2-PNL-275-R180-B	Common Q PAMS Panel Train B		Screened	> 0.5
11	WBN-2-HIC-068-396	RX HEAD VENT FLOW CONTROL		Screened	> 0.5
12	WBN-2-PNL-099-R46-A	Solid State Protection System Train A		Screened	> 0.5
13	WBN-2-PNL-099-R49-B	Solid State Protection System Train B		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
14	WBN-2-PNL-099-R6-E	Reactor Protection II Process System		Screened	> 0.5
15	WBN-1-ACUM-063-0001	SIS Accumulator Tank 1		Screened	> 0.5
16	WBN-1-ACUM-063-0002	SIS Accumulator Tank 2		Screened	> 0.5
17	WBN-1-ACUM-063-0003	SIS Accumulator Tank 3		Screened	> 0.5
18	WBN-1-ACUM-063-0004	SIS Accumulator Tank 4		Screened	> 0.5
19	WBN-0-BAT-236-0001-D	125 V Vital Battery I		Screened	> 0.5
20	WBN-0-BAT-236-0002-E	125 V Vital Battery II		Screened	> 0.5
21	WBN-0-BAT-236-0003-F	125 V Vital Battery III		Screened	> 0.5
22	WBN-0-BAT-236-0004-G	125 V Vital Battery IV		Screened	> 0.5
23	WBN-1-BD-211-A-A	6.9 KV shutdown Board 1A-A		Screened	> 0.5
24	WBN-2-BD-211-B-B	6.9 KV shutdown Board 2B-B		Screened	> 0.5
25	WBN-1-BD-212-A001-A	480V Shutdown Board 1A1-A		Screened	> 0.5
26	WBN-2-BD-212-A001-A	480V Shutdown Board 2A1-A		Screened	> 0.5
27	WBN-1-BD-212-A002-A	480V Shutdown Board 1A2-A		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
28	WBN-2-BD-212-B002-B	480V Shutdown Board 2B2-B		Screened	> 0.5
29	WBN-0-BD-236-0001-D	125V Vital Battery Board I		Screened	> 0.5
30	WBN-0-BD-236-0002-E	125V Vital Battery Board II		Screened	> 0.5
31	WBN-0-BD-236-0003-F	125V Vital Battery Board III		Screened	> 0.5
32	WBN-0-BD-236-0004-G	125V Vital Battery Board IV		Screened	> 0.5
33	WBN-0-CHGR-236-0001-D	125 V Vital Battery Charger I		Screened	> 0.5
34	WBN-0-CHGR-236-0002/E	125 V Vital Battery Charger II		Screened	> 0.5
35	WBN-0-CHGR-236-0003/F	125 V Vital Battery Charger III		Screened	> 0.5
36	WBN-0-CHGR-236-0004/G	125 V Vital Battery Charger IV		Screened	> 0.5
37	WBN-1-HTX-070-0185	CCS HEAT EXCHANGER A		Screened	> 0.5
38	WBN-2-HTX-070-0185	CCS HEAT EXCHANGER B		Screened	> 0.5
39	WBN-1-HTX-074-0030-A	RHR HEAT EXCHANGER 1A		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
40	WBN-2-HTX-074-0031-A	RHR HEAT EXCHANGER 2A		Screened	> 0.5
41	WBN-1-INV-235-0001-D	120 V AC Vital Inverter 1-I		Screened	> 0.5
42	WBN-2-INV-235-0001-D	120 V AC Vital Inverter 2-I		Screened	> 0.5
43	WBN-1-INV-235-0002-E	120 V AC Vital Inverter 1-II		Screened	> 0.5
44	WBN-2-INV-235-0002-E	120 V AC Vital Inverter 2-II		Screened	> 0.5
45	WBN-1-INV-235-0003-F	120 V AC Vital Inverter 1-III		Screened	> 0.5
46	WBN-2-INV-235-0003-F	120 V AC Vital Inverter 2-III		Screened	> 0.5
47	WBN-1-INV-235-0004-G	120 V AC Vital Inverter 1-IV		Screened	> 0.5
48	WBN-2-INV-235-0004-G	120 V AC Vital Inverter 2-IV		Screened	> 0.5
49	WBN-1-MCC-213-A001-A	480V Reactor MOV Board 1A1-A		Screened	> 0.5
50	WBN-2-MCC-213-A001-A	480V Reactor MOV Board 2A1-A		Screened	> 0.5
51	WBN-1-MCC-213-B001-B	480V Reactor MOV Board 1B1-B		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
52	WBN-2-MCC-213-B001-B	480V Reactor MOV Board 2B1-B		Screened	> 0.5
53	WBN-1-MCC-214-A001-A	Cont & Aux Bldg Vent Board 1A1-A		Screened	> 0.5
54	WBN-2-MCC-214-B001-B	Cont & Aux Bldg Vent Board 2B1-B		Screened	> 0.5
55	WBN-1-MCC-214-A002-A	Cont & Aux Bldg Vent Board 1A2-A		Screened	> 0.5
56	WBN-2-MCC-214-B002-B	Cont & Aux Bldg Vent Board 2B2-B		Screened	> 0.5
57	WBN-1-OXF-212-A001-A	480 V Transformer 1A1-A		Screened	> 0.5
58	WBN-2-OXF-212-A001-A	480 V Transformer 2A1-A		Screened	> 0.5
59	WBN-1-OXF-212-A002-A	480 V Transformer 1A2-A		Screened	> 0.5
60	WBN-2-OXF-212-B002-B	480 V Transformer 2B2-B		Screened	> 0.5
61	WBN-1-PMP-062-0108-A	Centrifugal Charging Pump 1A-A		Screened	> 0.5
62	WBN-2-PMP-062-0108-A	Centrifugal Charging Pump 2A-A		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
63	WBN-1-PMP-063-0010-A	SAFETY INJECTION PUMP 1A-A		Screened	> 0.5
64	WBN-2-PMP-063-0015-A	SAFETY INJECTION PUMP 2A-A		Screened	> 0.5
65	WBN-1-PMP-070-0046-A	Component Cooling System Pump 1A-A		Screened	> 0.5
66	WBN-2-PMP-070-0059-A	Component Cooling System Pump 2A-A		Screened	> 0.5
67	WBN-1-PMP-074-0010-A	RHR PUMP 1A-A		Screened	> 0.5
68	WBN-2-PMP-074-0020-B	RHR PUMP 2B-B		Screened	> 0.5
69	WBN-1-PNL-276-L011A	Steam Generator Level Control Panel		Screened	> 0.5
70	WBN-2-PNL-276-L011A	Steam Generator Level Control Panel		Screened	> 0.5
71	WBN-1-PNL-276-L011B	Steam Generator Level Control Panel		Screened	> 0.5
72	WBN-2-PNL-276-L011B	Steam Generator Level Control Panel		Screened	> 0.5
73	WBN-1-PNL-278-M003	UNIT CONT. BOARD PNL 1-M-3		Screened	> 0.5
74	WBN-2-PNL-278-M003	UNIT CONT. BOARD PNL 2-M-3		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
75	WBN-1-PNL-278-M004	UNIT CONT. BOARD PNL 1-M-4		Screened	> 0.5
76	WBN-2-PNL-278-M004	UNIT CONT. BOARD PNL 2-M-4		Screened	> 0.5
77	WBN-1-PNL-278-M010	TEMPERATURE MONITORING		Screened	> 0.5
78	WBN-2-PNL-278-M010	TEMPERATURE MONITORING		Screened	> 0.5
79	WBN-1,2-TANK-018-0038, 41	7 Day Fuel Oil Sup Dsl Gen		Screened	> 0.5
80	WBN-1-TANK-063-0046	Refueling Water Storage Tank		Screened	> 0.5
81	WBN-2-TANK-063-0046	Refueling Water Storage Tank		Screened	> 0.5
82	WBN-1-TANK-070-0001	Component Cooling Water Surge Tank		Screened	> 0.5
83	WBN-2-TANK-070-0001	Component Cooling Water Surge Tank		Screened	> 0.5
84	WBN-1-FCV-062-0063-A	CVCS SEAL WATER RETURN HEADER ISOL		Screened	> 0.5
85	WBN-2-FCV-062-0063-A	CVCS SEAL WATER RETURN HEADER ISOL		Screened	> 0.5
86	WBN-1-FCV-063-0067	Accumulator Isolation Valve 4		Screened	> 0.5
87	WBN-2-FCV-063-0067	Accumulator Isolation Valve 4		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
88	WBN-1-FCV-063-0080	Accumulator Isolation Valve 3		Screened	> 0.5
89	WBN-2-FCV-063-0080	Accumulator Isolation Valve 3		Screened	> 0.5
90	WBN-1-FCV-067-0083	LWR CNTMT A CLRS SUP CIV		Screened	> 0.5
91	WBN-1-FCV-063-0098	Accumulator Isolation Valve 2		Screened	> 0.5
92	WBN-2-FCV-063-0098	Accumulator Isolation Valve 2		Screened	> 0.5
93	WBN-1-FCV-063-0118	Accumulator Isolation Valve 1		Screened	> 0.5
94	WBN-2-FCV-063-0118	Accumulator Isolation Valve 1		Screened	> 0.5
95	WBN-2-FCV-067-0083	LWR CNTMT A CLRS SUP CIV		Screened	> 0.5
96	WBN-1-FCV-067-0091	LWR CNTMT C CLRS SUP CIV		Screened	> 0.5
97	WBN-2-FCV-067-0091	LWR CNTMT C CLRS SUP CIV		Screened	> 0.5
98	WBN-1-FCV-067-0099	LWR CNTMT B CLRS SUP CIV		Screened	> 0.5
99	WBN-2-FCV-067-0099	LWR CNTMT B CLRS SUP CIV		Screened	> 0.5
100	WBN-1-FCV-067-0107	LWR CNTMT D CLRS SUP CIV		Screened	> 0.5
101	WBN-2-FCV-067-0107	LWR CNTMT D CLRS SUP CIV		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
102	WBN-1-FCV-067-0130	UPR CNTMT CLR A SUP CIV		Screened	> 0.5
103	WBN-2-FCV-067-0130	UPR CNTMT CLR A SUP CIV		Screened	> 0.5
104	WBN-1-FCV-067-0133	UPR CNTMT CLR C SUP CIV		Screened	> 0.5
105	WBN-2-FCV-067-0133	UPR CNTMT CLR C SUP CIV		Screened	> 0.5
106	WBN-1-FCV-067-0138	UPR CNTMT CLR B SUP CIV		Screened	> 0.5
107	WBN-2-FCV-067-0138	UPR CNTMT CLR B SUP CIV		Screened	> 0.5
108	WBN-1-FCV-067-0141	UPR CNTMT CLR D SUP CIV		Screened	> 0.5
109	WBN-2-FCV-067-0141	UPR CNTMT CLR D SUP CIV		Screened	> 0.5
110	WBN-2-FCV-067-0143	CCS HX DISCH to HDR B		Screened	> 0.5
111	WBN-1-FCV-067-0143	CCS HX DISCH to HDR B		Screened	> 0.5
112	WBN-0-FCV-067-0144	CCS HX C DISCH to HDR A		Screened	> 0.5
113	WBN-2-FCV-068-0332-B	PRESSURIZER PORV BLOCK VALVE		Screened	> 0.5
114	WBN-1-FCV-068-0333	PRESSURIZER PORV BLOCK VALVE		Screened	> 0.5
115	WBN-1-FCV-070-0090-A	RC Pump Therm Barrier Ret CNTNMT Isol		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
116	WBN-2-FCV-070-0090-A	RC Pump Therm Barrier Ret CNTNMT Isol		Screened	> 0.5
117	WBN-1-FCV-070-0133-A	RC Thermal Barrier Cont Isol Valve		Screened	> 0.5
118	WBN-2-FCV-070-0133-A	RC Thermal Barrier Cont Isol Valve		Screened	> 0.5
119	WBN-2-LCV-002-0173-B	TD AFW PUMP SG # 2 Level Control		Screened	> 0.5
120	WBN-1-LCV-003-0172-A	TD AFW PUMP SG # 3 Level Control		Screened	> 0.5
121	WBN-2-LCV-003-0172-A	TD AFW PUMP SG # 3 Level Control		Screened	> 0.5
122	WBN-1-LCV-003-0173-B	TD AFW PUMP SG # 2 Level Control		Screened	> 0.5
123	WBN-1-LCV-003-0174-B	TD AFW PUMP SG # 1 Level Control		Screened	> 0.5
124	WBN-2-LCV-003-0174-B	TD AFW PUMP SG # 1 Level Control		Screened	> 0.5
125	WBN-1-LCV-003-0175-A	TD AFW PUMP SG # 4 Level Control		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
126	WBN-2-LCV-003-0175-A	TD AFW PUMP SG # 4 Level Control		Screened	> 0.5
127	WBN-1-PCV-001-0005-T	SG 1Main STM HDR PWR Relief Control Valve		Screened	> 0.5
128	WBN-2-PCV-001-0005-T	SG 1Main STM HDR PWR Relief Control Valve		Screened	> 0.5
129	WBN-1-PCV-001-0012-T	SG 2 Main STM HDR PWR Relief Control Valve		Screened	> 0.5
130	WBN-2-PCV-001-0012-T	SG 2 Main STM HDR PWR Relief Control Valve		Screened	> 0.5
131	WBN-1-PCV-001-0023-T	SG 3 Main STM HDR PWR Relief Control Valve		Screened	> 0.5
132	WBN-2-PCV-001-0023-T	SG 3 Main STM HDR PWR Relief Control Valve		Screened	> 0.5
133	WBN-1-PCV-001-0030-T	SG 4Main STM HDR PWR Relief Control Valve		Screened	> 0.5
134	WBN-2-PCV-001-0030-T	SG 4Main STM HDR PWR Relief Control Valve		Screened	> 0.5
135	WBN-2-PCV-068-0334	PRESSURIZER PORV		Screened	> 0.5
136	WBN-1-PCV-068-0340A	PRESSURIZER PORV		Screened	> 0.5
137	WBN-1-SFV-001-0512	Steam Generator #3 Main Steam Safety Valve		Screened	> 0.5
138	WBN-2-SFV-001-0512	Steam Generator #3 Main Steam Safety Valve		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
139	WBN-1-SFV-001-0517	Steam Generator #2 Main Steam Safety Valve		Screened	> 0.5
140	WBN-2-SFV-001-0517	Steam Generator #2 Main Steam Safety Valve		Screened	> 0.5
141	WBN-1-SFV-001-0522	Steam Generator #1 Main Steam Safety Valve		Screened	> 0.5
142	WBN-2-SFV-001-0522	Steam Generator #1 Main Steam Safety Valve		Screened	> 0.5
143	WBN-1-SFV-001-0527	Steam Generator #4 Main Steam Safety Valve		Screened	> 0.5
144	WBN-2-SFV-001-0527	Steam Generator #4 Main Steam Safety Valve		Screened	> 0.5
145	WBN-1-FAN-030-0038	Containment Air Return Fan A-A		Screened	> 0.5
146	WBN-2-FAN-030-0039	Containment Air Return Fan B-B		Screened	> 0.5
147	WBN-1-EI-235-001/A1	AC OUTPUT AMMETER INVERTER 1-I		Screened	> 0.5
148	WBN-1-BD-235-0001-D	120 V AC Vital Instrument Power Board 1-I		Screened	> 0.5
149	WBN-1-EI-235-002/A1	AC OUTPUT AMMETER INVERTER 1-II		Screened	> 0.5
150	WBN-1-BD-235-0002-E	120 V AC Vital Instrument Power Board 1-II		Screened	> 0.5
151	WBN-1-BD-235-0003-F	120 V AC Vital Instrument Power Board 1-III		Screened	> 0.5
152	WBN-1-BD-235-0004-G	120 V AC Vital Instrument Power Board 1-IV		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
153	WBN-1-CLR-062-0108A-A	CCP 1A-A LUBE OIL COOLER		Screened	> 0.5
154	WBN-1-CLR-062-0108B-A	CCP 1A-A GEAR OIL COOLER		Screened	> 0.5
155	WBN-1-CLR-063-0010	SAFETY INJECTION PUMP 1A-A LUBE OIL COOLER		Screened	> 0.5
156	WBN-1-CLR-072-0027	CNTMT SPRAY PUMP 1A-A OIL COOLER		Screened	> 0.5
157	WBN-1-HTX-074-0010-A	RHR PUMP 1A-A SEAL WATER HEAT EXCHANGER		Screened	> 0.5
158	WBN-1-XS-003-0172A-A	STM GEN #3 TRF SW		Screened	> 0.5
159	WBN-1-XS-003-0175A-A	STM GEN #4 TRF SW		Screened	> 0.5
160	WBN-1-XS-003-0173A-B	STM GEN #2 TRF SW		Screened	> 0.5
161	WBN-1-XS-003-0174A-B	STM GEN #1 TRF SW		Screened	> 0.5
162	WBN-1-XI-046-57	TURB AFWP DEMAND		Screened	> 0.5
163	WBN-1-FIC-046-0057A-S	AUX FPT FLOW IND CONTROLLER		Screened	> 0.5
164	WBN-1-HS-046-0056A-S	TD AFW PMP Trip/Throttle Valve Handswitch AUTO MAN REMOTE SP FOR FIC-46-57B		Screened	> 0.5
165	WBN-1-SI-046-0056A-S	AFWT A-S SPEED		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
166	WBN-1-XI-046-0054A	AFWT A-S MOP POSITION		Screened	> 0.5
167	WBN-1-XI-068-0100	Plasma Display		Screened	> 0.5
168	WBN-1-XS-068-0101	Plasma Display Key Pad		Screened	> 0.5
169	WBN-1-HS-068-340A-A	RCS PRZR PWR RELIEF VALVE		Screened	> 0.5
170	WBN-2-CPU-094-6000	Common Q Operator Module Node Box		Screened	> 0.5
171	WBN-2-FOC-094-4001A	Common Q first modem		Screened	> 0.5
172	WBN-1-HIC-068-397	RX HEAD VENT FLOW CONTROL		Screened	> 0.5
173	WBN-2-HS-063-0010A	SIS PUMP A-A MOTOR		Screened	> 0.5
174	WBN-1-HS-063-0010A	SIS PUMP A-A MOTOR		Screened	> 0.5
175	WBN-1-HS-030-0038A	AIR RET FAN A-A ON/OFF		Screened	> 0.5
176	WBN-2-HS-030-0039B	AIR RET FAN B-B ON/OFF		Screened	> 0.5
177	WBN-2-EI-235-001/A1	AC OUTPUT AMMETER INVERTER 2-I		Screened	> 0.5
178	WBN-2-BD-235-0001-D	120 V AC Vital Instrument Power Board 2-I		Screened	> 0.5
179	WBN-2-BD-235-0002-E	120 V AC Vital Instrument Power Board 2-II		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
180	WBN-2-EI-235-002/A1	AC OUTPUT AMMETER INVERTER 2-II		Screened	> 0.5
181	WBN-2-BD-235-0003-F	120 V AC Vital Instrument Power Board 2-III		Screened	> 0.5
182	WBN-2-BD-235-0004-G	120 V AC Vital Instrument Power Board 2-IV		Screened	> 0.5
183	WBN-2-CLR-062-0108A-A	CCP 2A-A LUBE OIL COOLER		Screened	> 0.5
184	WBN-2-CLR-062-0108B-A	CCP 2A-A GEAR OIL COOLER		Screened	> 0.5
185	WBN-2-CLR-063-0010	SAFETY INJECTION PUMP 2A-A LUBE OIL COOLER		Screened	> 0.5
186	WBN-2-CLR-072-0027	CNTMT SPRAY PUMP 2A-A OIL COOLER		Screened	> 0.5
187	WBN-2-HTX-074-0010-A	RHR PUMP 2A-A SEAL WATER HEAT EXCHANGER		Screened	> 0.5
188	WBN-2-XS-003-0172A-A	STM GEN #3 TRF SW		Screened	> 0.5
189	WBN-2-XS-003-0175A-A	STM GEN #4 TRF SW		Screened	> 0.5
190	WBN-2-XS-003-0173A-B	STM GEN #2 TRF SW		Screened	> 0.5
191	WBN-2-XS-003-0174A-B	STM GEN #1 TRF SW		Screened	> 0.5
192	WBN-2-XI-046-57	TURB AFWP DEMAND		Screened	> 0.5
193	WBN-2-FIC-046-0057A-S	AUX FPT FLOW IND CONTROLLER		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
194	WBN-2-HS-046-0056A-S	TD AFW PMP Trip/Throttle Valve Handswitch AUTO MAN REMOTE SP FOR FIC-46-57B		Screened	> 0.5
195	WBN-2-SI-046-0056A-S	AFWT A-S SPEED		Screened	> 0.5
196	WBN-2-XI-046-0054A	AFWT A-S MOP POSITION		Screened	> 0.5
197	WBN-2-HS-068-333A	RCS PRZR REL FLOW CONTROL		Screened	> 0.5
198	WBN-2-HIC-068-397	RX HEAD VENT FLOW CONTROL		Screened	> 0.5
199	WBN-2-MON-068-0110	Plasma Touch Screen Display		Screened	> 0.5
200	WBN-2-BD-211-A	6.9 KV shutdown Board 2A-A		Screened	> 0.5
201	WBN-2-ACUM-063-0001	SIS Accumulator Tank 1		Screened	> 0.5
202	WBN-2-ACUM-063-0002	SIS Accumulator Tank 2		Screened	> 0.5
203	WBN-2-ACUM-063-0003	SIS Accumulator Tank 3		Screened	> 0.5
204	WBN-2-ACUM-063-0004	SIS Accumulator Tank 4		Screened	> 0.5
205	WBN-1-HIC-068-396	RX HEAD VENT FLOW CONTROL		Screened	> 0.5
206	WBN-1-PNL-099-R2-D	Reactor Protection I Process System		Screened	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
207	WBN-1-PNL-099-R46-A	Solid State Protection System Train A		Screened	> 0.5
208	WBN-1-PNL-099-R49-B	Solid State Protection System Train B		Screened	> 0.5
209	WBN-1-PNL-099-R6-E	Reactor Protection II Process System		Screened	> 0.5
210	WBN-1-PMP-072-0027-A	Containment Spray Pump 1A-A		Screened	> 0.5
211	WBN-2-PI-001-0027D	MAIN STEAM LOOP 4 PRESSURE (typical for each SG)		Anchorage	0.56
212	WBN-2-HS-046-0056B-S	TD AFW PMP TRIP/THV 2-FCV-1-51 POS CNTL		Functionality	0.57
213	WBN-2-PS-002-0321	Pressure Switch to open U2 AOV 2-FCV-3-6386 from AFW Supply Tank upon low pressure in U1 Condensate supply piping.		Functionality	0.83
214	WBN-1,2-FSV-003-6386	Solenoid valve to open AFW Supply Tank insolation Valve 1,2-FCV-3-6386		Functionality	0.83
215	WBN-1-FT-63-151	Safety Injection Pump Flow		Anchorage	> 0.5
216	WBN-2-FT-63-20	Safety Injection Pump Flow		Anchorage	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
217	WBN-1-PI-001-0027D	MAIN STEAM LOOP 4 PRESSURE (typical for each SG)		Anchorage	0.56
218	WBN-1-HS-046-0056B-S	TD AFW PMP TRIP/THV 1-FCV-1-51 POS CNTL		Functionality	0.57
219	WBN-0-SW-360-103C, 203C	Fuel Oil Transfer Pmp Disconnect SW	HCLPF associated with Item #404 Fuel Oil Storage Tank. Rule of box.	Anchorage	0.66
220			Not Used		
221	WBN-0-PMP-360-103, 203	Fuel Oil System Transfer Pump	HCLPF associated with Item #404 Fuel Oil Storage Tank. Rule of box.	Anchorage	0.66
222	WBN-0-LIT-003-227	Level Indicating Transmitter for the AFW Supply Tank and High/Low Level Alarms		Anchorage	0.51
223	WBN-0-FU1-360-0103A	Primary Cntrl Fuse for Fuel Oil Pump A Starter	HCLPF associated with Item #267, and conservatively assigned as 0.5g. Rule of box.	Anchorage	0.5
224	WBN-0-FU1-360-0103B	Secondary Cntrl Fuse for Fuel Oil Pump A Starter	HCLPF associated with Item #267, and conservatively assigned as 0.5g. Rule of box.	Anchorage	0.5
225	WBN-0-FU1-360-0103C	Primary Cntrl Fuse for Fuel Oil Pump A Starter	HCLPF associated with Item #267, and conservatively assigned as 0.5g. Rule of box.	Anchorage	0.5
226	WBN-0-FUDS-360-FP/AM	480 V FLEX Main Panel A - Main - Disconnect		Functionality	0.57

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
227	WBN-0-FUDS-360-FP/BM	480 v FLEX Main Panel B - Main - Disconnect		Functionality	0.57
228	WBN-0-XSW-236-0004-S	480v AC Vital Transfer Switch IV		Functionality	0.50
229	WBN-0-XSW-236-0003-S	480v AC Vital Transfer Switch III		Functionality	0.50
230	WBN-0-XSW-236-0002-S	480v AC Vital Transfer Switch II		Functionality	0.50
231	WBN-0-XSW-236-0001-S	480v AC Vital Transfer Switch I		Functionality	0.50
232	WBN-0-GNGC-360-DG/A, B	480 V FLEX DG Neutral Grounding Resistor Box	HCLPF assigned based on Junction Box subgroup from HCLPF calc	Functionality	0.57
233	WBN-0-BKR-360-DG/A, B	480 V FLEX DG Circuit Breaker		Functionality	0.57
234	WBN-1-HTR-268-various	Hydrogen Igniters Group A - 34 igniters		screened (rugged)	0.5
235	WBN-2-HTR-268-various	Hydrogen Igniters Group B - 34 igniters		screened (rugged)	0.5
236	WBN-0-RFV-003-0005	Conservation vent valve for the AFW Supply Tank.		screened (Table 2.4)	0.5
237	WBN-1-FCV-001-0052	TD Aux Feedwater Pmp Governor Valve		screened	0.5
238	WBN-2-FCV-001-0052	TD Aux Feedwater Pmp Governor Valve		screened	0.5
239	WBN-0-PI-003-1	Pressure indicator for the AFW Supply Tank		screened (rugged)	0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
240	WBN-1-PS-002-0320	Pressure Switch to open U1 AOV 1-FCV-3-6386 from AFW Supply Tank upon low pressure in U1 Condensate supply piping.		screened (rugged)	0.5
241	WBN-0-BD-360-0003A, 3B	3MW Diesel Generator 6.9KV Switchgear		Functionality	0.68
242	WBN-2-DXF-268-0002-B	Hydrogen Mitigation Transformer		Anchorage	0.51
243	WBN-1-DXF-268-0001-A	Hydrogen Mitigation Transformer		Anchorage	0.51
244	WBN-0-DXF-360-DG/AP, BP	480 V FLEX DG 2 KVA Sealed XFMR		Functionality	0.57
245	WBN-0-XFMR-360-3A/1, 3B/1	6900V 3MW FLEX Diesel GEN 20 KVA Dry Type Transformer		Functionality	0.58
246	WBN-0-XFMR-360-3A/2, 3B/2	6900V 3MW FLEX Diesel GEN 5 KVA Dry Type Transformer		Functionality	0.57
247	WBN-1-PNL-276-L381	TDAFWP Control Panel		Anchorage	0.56
248	WBN-2-PNL-276-L381	TDAFWP Control Panel		Anchorage	0.56
249	WBN-0-PNL-360-DG/A1	Fuel Oil Transfer Pump Control Panel		Functionality	0.65

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
250	WBN-0-XSW-236-0001A-S	125V Vital Batt CHGR I 480 V FLEX Transfer Switch		Functionality	0.58
251	WBN-0-XSW-236-0002A-S	125V Vital Batt CHGR 2 480 V FLEX Transfer Switch		Functionality	0.58
252	WBN-0-XSW-236-0003A-S	125V Vital Batt CHGR 3 480 V FLEX Transfer Switch		Functionality	0.58
253	WBN-0-XSW-236-0004A-S	125V Vital Batt CHGR 4 480 V FLEX Transfer Switch		Functionality	0.58
254	WBN-0-PNL-360-FP/A	480 V FLEX Fuse Panel A		Functionality	0.57
255	WBN-0-PNL-360-FP/B	480 V FLEX Fuse Panel B		Functionality	0.57
256	WBN-1-PNL-276-L326-S	AUX FW TURBINE SPEED CONTROL PANEL		Functionality	0.85
257	WBN-2-PNL-276-L326-S	AUX FW TURBINE SPEED CONTROL PANEL		Functionality	0.85
258	WBN-0-RES-360-003A, 3B	3MW Diesel Generator Neutral Grounding Resistor		Functionality	0.79
259	WBN-1-PNL-276-L381A	AUX FEEDWATER CONTROL		Functionality	0.57
260	WBN-2-PNL-276-L381A	AUX FEEDWATER CONTROL		Functionality	0.57

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
261	WBN-0-XSW-360-HPCS	FLEX COMMON SPARE HP PUMP TRANSFER SWITCH		Functionality	0.57
262	WBN-1-XSW-82-A	DG 1A-A Transfer Switch TO 6.9KV SD BD 1A-A		Functionality	0.57
263	WBN-2-XSW-82-A	DG 2A-A Transfer Switch TO 6.9KV SD BD 2A-A		Functionality	0.57
264	WBN-1-XSW-82-B	DG 1B-B Transfer Switch DG to SD BD 1B-B		Functionality	0.57
265	WBN-2-XSW-82-B	DG 2B-B Transfer Switch DG to SD BD 2B-B		Functionality	0.57
266	WBN-0-FUDS-360-DG/AP2, BP2	480 V FLEX DG Pump Disconnect Switch		Functionality	0.57
267	WBN-0-STR-360-0103, 203	3MW FLEX Diesel GEN PMP Starter		Anchorage	0.54
268	WBN-0-SW-360-0003A/1, 3B/1	6900V 3MW FLEX Diesel GEN Fused Disconnect Switch		Anchorage	0.5
269	WBN-1-TE-068-0380-E	Reactor Level Cap tube Temp Comp		Anchorage	> 0.5
270	WBN-2-PNL-276-L340	Reactor Vessel instrumentation System II Panel	HCLPF assigned based on Instruments mounted on unitstrut subgroup from HCLPF calc	Anchorage	0.52

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
271	WBN-1-PNL-276-L388	Reactor Vessel instrumentation System I Panel	HCLPF assigned based on Instruments mounted on unitstrut subgroup from HCLPF calc	Anchorage	0.52
272	WBN-2-TE-068-0380-E	Reactor Level Cap tube Temp Comp		Anchorage	> 0.5
273	WBN-0-LI-3-227	AFW Supply Tank Level Indicator		Anchorage	> 0.5
274	WBN-1-LI-63-51	RWST Level		Anchorage	> 0.5
275	WBN-2-LI-63-51	RWST Level		Anchorage	> 0.5
276	WBN-1-LPF-3-142	TDAFW Pump Flow		Anchorage	> 0.5
277	WBN-2-LPF-3-142	TDAFW Pump Flow		Anchorage	> 0.5
278	WBN-1-LPF-3-147B	AFW Flow S/G 3		Anchorage	> 0.5
279	WBN-2-LPF-3-147B	AFW Flow S/G 3		Anchorage	> 0.5
280	WBN-1-LPF-3-155A	AFW Flow S/G 2		Anchorage	> 0.5
281	WBN-2-LPF-3-155A	AFW Flow S/G 2		Anchorage	> 0.5
282	WBN-1-LPF-3-163B	AFW Flow S/G 1		Anchorage	> 0.5
283	WBN-2-LPF-3-163B	AFW Flow S/G 1		Anchorage	> 0.5
284	WBN-1-LPF-3-170A	AFW Flow S/G 4		Anchorage	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
285	WBN-2-LPF-3-170A	AFW Flow S/G 4		Anchorage	> 0.5
286	WBN-1-LPL-3-111	S/G WR Level Loop 4		Anchorage	> 0.5
287	WBN-2-LPL-3-111	S/G WR Level Loop 4		Anchorage	> 0.5
288	WBN-1-LPL-3-148	S/G NR Level Loop 3		Anchorage	> 0.5
289	WBN-2-LPL-3-148	S/G NR Level Loop 3		Anchorage	> 0.5
290	WBN-1-LPL-3-156	S/G NR Level Loop 2		Anchorage	> 0.5
291	WBN-2-LPL-3-156	S/G NR Level Loop 2		Anchorage	> 0.5
292	WBN-1-LPL-3-164	S/G NR Level Loop 1		Anchorage	> 0.5
293	WBN-2-LPL-3-164	S/G NR Level Loop 1		Anchorage	> 0.5
294	WBN-1-LPL-3-171	S/G NR Level Loop 4		Anchorage	> 0.5
295	WBN-2-LPL-3-171	S/G NR Level Loop 4		Anchorage	> 0.5
296	WBN-1-LPL-3-43	S/G WR Level Loop 1		Anchorage	> 0.5
297	WBN-2-LPL-3-43	S/G WR Level Loop 1		Anchorage	> 0.5
298	WBN-1-LPL-3-56	S/G WR Level Loop 1		Anchorage	> 0.5
299	WBN-2-LPL-3-56	S/G WR Level Loop 2		Anchorage	> 0.5
300	WBN-1-LPL-3-98	S/G WR Level Loop 3		Anchorage	> 0.5
301	WBN-2-LPL-3-98	S/G WR Level Loop 3		Anchorage	> 0.5
302	WBN-1-LPL-68-335	PZR Level		Anchorage	> 0.5
303	WBN-2-LPL-68-335	PZR Level		Anchorage	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
304	WBN-0-LPL-78-42	SFP Level		Anchorage	> 0.5
305	WBN-1-LPN-92-131	Nuclear Flux		Anchorage	> 0.5
306	WBN-2-LPN-92-132	Nuclear Flux		Anchorage	> 0.5
307	WBN-1-LPP-1-20A	S/G Pressure Loop 3		Anchorage	> 0.5
308	WBN-2-LPP-1-20A	S/G Pressure Loop 3		Anchorage	> 0.5
309	WBN-1-LPP-1-27B	S/G Pressure Loop 4		Anchorage	> 0.5
310	WBN-2-LPP-1-27B	S/G Pressure Loop 4		Anchorage	> 0.5
311	WBN-1-LPP-1-2A	S/G Pressure Loop 1		Anchorage	> 0.5
312	WBN-2-LPP-1-2A	S/G Pressure Loop 1		Anchorage	> 0.5
313	WBN-1-LPP-1-9A	S/G Pressure Loop 2		Anchorage	> 0.5
314	WBN-2-LPP-1-9A	S/G Pressure Loop 2		Anchorage	> 0.5
315	WBN-1-LPP-68-68	RCS WR Pressure		Anchorage	> 0.5
316	WBN-2-LPP-68-66	RCS WR Pressure		Anchorage	> 0.5
317	WBN-1-LPPD-30-310	Containment Pressure		Anchorage	> 0.5
318	WBN-2-LPPD-30-310	Containment Pressure		Anchorage	> 0.5

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
319	WBN-1-LPT-30-1032	Containment Temperature		Anchorage	> 0.5
320	WBN-2-LPT-30-1032	Containment Temperature		Anchorage	> 0.5
321	WBN-1-LPT-68-1	RCS WR T_{hot} Loop 1		Anchorage	> 0.5
322	WBN-2-LPT-68-1	RCS WR T_{hot} Loop 1		Anchorage	> 0.5
323	WBN-1-LPT-68-18	RCS WR T_{cold} Loop 1		Anchorage	> 0.5
324	WBN-2-LPT-68-18	RCS WR T_{cold} Loop 1		Anchorage	> 0.5
325	WBN-1-LPT-68-41	RCS WR T_{cold} Loop 2		Anchorage	> 0.5
326	WBN-2-LPT-68-41	RCS WR T_{cold} Loop 2		Anchorage	> 0.5
327	WBN-1-LPT-68-60	RCS WR T_{cold} Loop 3		Anchorage	> 0.5
328	WBN-2-LPT-68-60	RCS WR T_{cold} Loop 3		Anchorage	> 0.5
329	WBN-1-LPT-68-83	RCS WR T_{cold} Loop 4		Anchorage	> 0.5
330	WBN-2-LPT-68-83	RCS WR T_{cold} Loop 4		Anchorage	> 0.5
331	WBN-1-PNL-276-L1000	PORV AND AFW-LCV STM GEN 3 & 4 PNL		Anchorage	0.52
332	WBN-2-PNL-276-L1000	PORV AND AFW-LCV STM GEN 3 & 4 PNL		Anchorage	0.52

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
333	WBN-1-PNL-276-L1001	PORV AND AFW-LCV STM GEN 1 & 2 PNL		Anchorage	0.52
334	WBN-2-PNL-276-L1001	PORV AND AFW-LCV STM GEN 1 & 2 PNL		Anchorage	0.52
335	WBN-1-PNL-094-0008A-J	Incore Thermocouple Mon Sys Jbox		Anchorage	0.52
336	WBN-1-PNL-094-0008B-J	Incore Thermocouple Mon Sys Jbox		Anchorage	0.52
337	WBN-0-DPL-360-0003A/1, 3B/1	480-Volt Distribution Panel		Functionality	0.68
338	WBN-0-DPL-360-0003A/2, 3B/2	120/240 VAC Panelboard		Functionality	0.68
339	WBN-2-DPL-268-0002-B	Hydrogen Mitigation Distribution Panel		Functionality	0.57
340	WBN-1-DPL-268-0001-A	Hydrogen Mitigation Distribution Panel		Functionality	0.57
341	WBN-0-FUSD-360-DG/AP1, BP1	480 V FLEX DG Pump Fusible Disc Switch		Functionality	0.57
342	WBN-0-DG-360-000A, 000B	480V FLEX/ESBO 225 KVA Diesel Generator		Functionality	0.57
343	WBN-0-DG-360-0003A, 3B	6900V 3MW Diesel Generator		Anchorage	0.87

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
344	WBN-1-PMP-003-0001A-S	TD Aux Feedwater Pump 1A-S		Anchorage	0.59
345	WBN-2-PMP-003-0002A-S	TD Aux Feedwater Pump 2A-S		Anchorage	0.59
346	WBN-0-PMP-360-DG/A1, B1	Fuel Oil Transfer Pump		Functionality	0.57
347	WBN-1-PMP-360-HP01	HP FLEX Pump		Functionality	0.5
348	WBN-2-PMP-360-HP01	HP FLEX Pump		Functionality	0.5
349	WBN-1-PMP-360-IP01	FLEX IP PUMP 01		Functionality	0.5
350	WBN-2-PMP-360-IP01	FLEX IP PUMP 01		Functionality	0.5
351	WBN-1-PMP-360-IP02	FLEX IP PUMP 02		Functionality	0.5
352	WBN-2-PMP-360-IP02	FLEX IP PUMP 02		Functionality	0.5
353	WBN-1-FCV-003-6386	FCV SHARED AFW TANK OUTLET PIPE TO U1 CONDENSATE		Functionality	0.83
354	WBN-2-FCV-003-6386	FCV FOR AFW Supply Tank Outlet Piping to U2 Condensate		Functionality	0.83
355	WBN-0-FCV-070-0194-B	SFP HEAT EXCHANGER B CCS SUPPLY		Functionality	0.69

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
356	WBN-0-FCV-070-0197-A	SFP HEAT EXCHANGER A CCS SUPPLY		Functionality	0.69
357	WBN-0-FCV-067-0205	Sta Ser & Cntl Air Cmpr Supply Hdr A Isol valve		Functionality	0.83
358	WBN-0-FCV-067-0208	Sta Ser & Cntl Air Cmpr Supply Hdr B Isol valve		Functionality	0.83
359	WBN-1-FCV-001-051	TD Aux Feedwater Pmp Trip & Throttle Valve		Functionality	0.7
360	WBN-2-FCV-001-051	TD Aux Feedwater Pmp Trip & Throttle Valve		Functionality	0.7
361	WBN-2-FCV-003-0179A-B	ERCW Header B TD AFW PMP SUCT (PS-144)		Functionality	1.14
362	WBN-2-FCV-003-0136A-A	ERCW Header A TD AFW PMP SUCT (PS-139)		Functionality	1.14
363	WBN-2-FCV-003-0136B-A	ERCW Header A TD AFW PMP SUCT		Functionality	1.14
364	WBN-2-FCV-003-0179B-B	ERCW Header B TD AFW PMP SUCT		Functionality	1.14
365	WBN-1-FCV-003-0136A-A	ERCW Header A TD AFW PMP SUCT (PS-139)		Functionality	1.14
366	WBN-1-FCV-003-0136B-A	ERCW Header A TD AFW PMP SUCT		Functionality	1.14
367	WBN-1-FCV-003-0179A-B	ERCW Header B TD AFW PMP SUCT (PS-144)		Functionality	1.14
368	WBN-1-FCV-003-0179B-B	ERCW Header B TD AFW PMP SUCT		Functionality	1.14
369	WBN-1-FCV-067-0147A	CCS HX C SUP FROM HDR 1A		Functionality	0.92

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
370	WBN-1-FCV-067-0458A	CCS HX C SUP FROM HDR 1B		Functionality	0.92
371	WBN-1-TANK-3-0402A	N2 TANK NO. 1 SUPPLY TO 1-LCV-003-0173-B		Anchorage	0.63
372	WBN-1-TANK-001-0405A	N2 TANK NO. 1 SUP TO 1-PCV-001-0012-B		Anchorage	0.63
373	WBN-2-TANK-001-0405A	N2 TANK NO. 1 SUP TO 2-PCV-001-0012-B		Anchorage	0.63
374	WBN-1-TANK-001-0405B	N2 TANK NO. 2 SUP TO 1-PCV-001-0012-B		Anchorage	0.63
375	WBN-2-TANK-001-0405B	N2 TANK NO. 2 SUP TO 2-PCV-001-0012-B		Anchorage	0.63
376	WBN-1-TANK-001-0406A	N2 TANK NO. 1 SUP TO 1-PCV-001-0030-B		Anchorage	0.63
377	WBN-2-TANK-001-0406A	N2 TANK NO. 1 SUP TO 2-PCV-001-0030-B		Anchorage	0.63
378	WBN-1-TANK-001-0406B	N2 TANK NO. 2 SUP TO 1-PCV-001-0030-B		Anchorage	0.63
379	WBN-2-TANK-001-0406B	N2 TANK NO. 2 SUP TO 2-PCV-001-0030-B		Anchorage	0.63
380	WBN-1-TANK-001-0407A	N2 TANK NO. 1 SUP TO 1-PCV-001-0023-A		Anchorage	0.63

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
381	WBN-2-TANK-001-0407A	N2 TANK NO. 1 SUP TO 2-PCV-1-0023-A		Anchorage	0.63
382	WBN-1-TANK-001-0407B	N2 TANK NO. 2 SUP TO 1-PCV-001-0023-A		Anchorage	0.63
383	WBN-2-TANK-001-0407B	N2 TANK NO. 2 SUP TO 2-PCV-1-0023-A		Anchorage	0.63
384	WBN-1-TANK-001-0408A	N2 TANK NO. 1 SUP TO 1-PCV-001-0005-A		Anchorage	0.63
385	WBN-2-TANK-001-0408A	N2 TANK NO. 1 SUP TO 2-PCV-001-0005-A		Anchorage	0.63
386	WBN-1-TANK-001-0408B	N2 TANK NO. 2 SUP TO 1-PCV-001-0005-A		Anchorage	0.63
387	WBN-2-TANK-001-0408B	N2 TANK NO. 1 SUP TO 2-PCV-001-0005-A		Anchorage	0.63
388	WBN-2-TANK-3-0402A	N2 TANK NO. 1 SUPPLY TO 2-LCV-003-0173-B		Anchorage	0.63
389	WBN-1-TANK-3-0402B	N2 TANK NO. 2 SUPPLY TO 1-LCV-003-0173-B		Anchorage	0.63
390	WBN-2-TANK-3-0402B	N2 TANK NO. 2 SUPPLY TO 2-LCV-003-0173-B		Anchorage	0.63
391	WBN-1-TANK-3-0402C	N2 TANK NO. 1 SUPPLY TO 1-LCV-003-0174-B		Anchorage	0.63

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
392	WBN-2-TANK-3-0402C	N2 TANK NO. 1 SUPPLY TO 2-LCV-003-0174-B		Anchorage	0.63
393	WBN-1-TANK-3-0402D	N2 TANK NO. 2 SUPPLY TO 1-LCV-003-0174-B		Anchorage	0.63
394	WBN-2-TANK-3-0402D	N2 TANK NO. 2 SUPPLY TO 2-LCV-003-0174-B		Anchorage	0.63
395	WBN-1-TANK-3-0403A	N2 TANK NO. 1 SUP TO 1-LCV-003-0172-A		Anchorage	0.63
396	WBN-2-TANK-3-0403A	N2 TANK NO. 1 SUP TO 2-LCV-3-172-A		Anchorage	0.63
397	WBN-1-TANK-3-0403B	N2 TANK NO. 2 SUP TO 1-LCV-003-172-A		Anchorage	0.63
398	WBN-2-TANK-3-0403B	N2 TANK NO. 2 SUP TO 2-LCV-3-172-A		Anchorage	0.63
399	WBN-1-TANK-3-0403C	N2 TANK NO. 1 SUP TO 1-LCV-003-0175-A		Anchorage	0.63
400	WBN-2-TANK-3-0403C	N2 TANK NO. 1 SUP TO 2-LCV-3-175-A		Anchorage	0.63
401	WBN-1-TANK-3-0403D	N2 TANK NO. 2 SUP TO 1-LCV-003-0175-A		Anchorage	0.63
402	WBN-2-TANK-3-0403D	N2 TANK NO. 2 SUP TO 2-LCV-3-175-A		Anchorage	0.63
403	WBN-0-TANK-003-0226	AFW Supply Tank 500,000 gallons		Anchorage	0.51
404	WBN-0-TANK-360-113, 213	6900V 3MW FLEX DG Fuel Oil Storage Tank		Anchorage	0.66

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
405	WBN-1-CLR-003-0001-B	TD Aux FW PMP Oil Cooler		Functionality	3
406	WBN-2-CLR-003-0001-B	TD Aux FW PMP Oil Cooler		Functionality	3
407	WBN-2-RLY-046-0057-S	Transfer Sw in Aux Pos Isol Rly		Chatter	1.55
408	WBN-2-RLY-046-B002/1-S	B2-1 Relay AFPT Trip & Throttle Vlv Photo Iso		Chatter	1.3
409	WBN-2-RLY-046-B002/2-S	B2-2 Relay AFPT Trip & Throttle Vlv Photo Iso		Chatter	1.3
410	WBN-2-RLY-046-B002/3-S	B2-3 Relay AFPT Speed Control Instr Pwr		Chatter	1.55
411	WBN-2-RLY-046-BA-S	BA & BB Relay AFPT Speed Control Buffer Relay		Chatter	1.79
412	WBN-2-RLY-046-BA1-S	BA1 Relay AFPT Speed Control Buffer		Chatter	1.79
413	WBN-2-RLY-046-BB-S	BA & BB Relay AFPT Speed Control Buffer Relay		Chatter	1.79
414	WBN-2-RLY-046-R/A-A	Aux FW Pump Vlv Sep Relay		Chatter	1.4
415	WBN-2-RLY-046-R/B-B	Aux FW Pump Vlv Sep Relay		Chatter	1.4
416	WBN-2-RLY-046-R1-S	AFPT ACC Reset Relay		Chatter	1.79
417	WBN-2-RLY-046-R2-S	AFPT ACC Reset Relay		Chatter	1.79

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
418	WBN-2-RLY-046-R4-A	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay TR A		Chatter	1.79
419	WBN-2-RLY-046-R5-A	Aux Feed Pump Trb Stm Supply Xfer Sep Relay TR A		Chatter	1.62
420	WBN-2-RLY-046-RA1-A	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay		Chatter	1.4
421	WBN-2-RLY-046-RA2-A	Turb/Mtr Driven Aux FW Pump Vlv SSEP Relay		Chatter	1.4
422	WBN-2-RLY-046-RAS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-156 & 164		Chatter	1.4
423	WBN-2-RLY-046-RB1-B	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay		Chatter	1.4
424	WBN-2-RLY-046-RB2-B	Turb Driven Aux FW Pump Vlv SEP Relay		Chatter	1.4
425	WBN-2-RLY-046-RBS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-171 & 148		Chatter	1.4
426	WBN-2-RLY-046-SST-S	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay		Chatter	1.79
427	WBN-1-RLY-046-0057-S	Transfer Sw in Aux Pos Isol Rly		Chatter	1.55
428	WBN-1-RLY-046-B002/1-S	B2-1 Relay AFPT Trip & Throttle Vlv Photo Iso		Chatter	1.3
429	WBN-1-RLY-046-B002/2-S	B2-2 Relay AFPT Trip & Throttle Vlv Photo Iso		Chatter	1.3
430	WBN-1-RLY-046-B002/3-S	B2-3 Relay AFPT Speed Control Instr Pwr		Chatter	1.55

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
431	WBN-1-RLY-046-BA-S	BA & BB Relay AFPT Speed Control Buffer Relay		Chatter	1.79
432	WBN-1-RLY-046-BA1-S	BA1 Relay AFPT Speed Control Buffer		Chatter	1.79
433	WBN-1-RLY-046-BB-S	BA & BB Relay AFPT Speed Control Buffer Relay		Chatter	1.79
434	WBN-1-RLY-046-R/A-A	Aux FW Pump Vlv Sep Relay		Chatter	1.4
435	WBN-1-RLY-046-R/B-B	Aux FW Pump Vlv Sep Relay		Chatter	1.4
436	WBN-1-RLY-046-R1-S	AFPT ACC Reset Relay		Chatter	1.79
437	WBN-1-RLY-046-R2-S	AFPT ACC Reset Relay		Chatter	1.79
438	WBN-1-RLY-046-R4-A	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay TR A		Chatter	1.79
439	WBN-1-RLY-046-R5-A	Aux Feed Pump Trb Stm Supply Xfer Sep Relay TR A		Chatter	1.62
440	WBN-1-RLY-046-RA1-A	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay		Chatter	1.4
441	WBN-1-RLY-046-RA2-A	Turb/Mtr Driven Aux FW Pump Vlv SSEP Relay		Chatter	1.4
442	WBN-1-RLY-046-RAS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-156 & 164		Chatter	1.4

Item #	UNID	Description	Notes/Comments	Failure Mode	HCLPF (g)
443	WBN-1-RLY-046-RB1-B	Turb/Mtr Driven Aux FW Pump Vlvs Aux Relay		Chatter	1.4
444	WBN-1-RLY-046-RB2-B	Turb Driven Aux FW Pump Vlv SEP Relay		Chatter	1.4
445	WBN-1-RLY-046-RBS-S	AFPT Pump 2-FCV-1-51 Mtr Dr Vlv 2-LCV-3-171 & 148		Chatter	1.4
446	WBN-1-RLY-046-SST-S	AFPT SUP Xfer FCV-1-15,-16 & -51 Sep Relay		Chatter	1.79
447	WBN-1-STR-046-0056A-S	TDAFW Trip/Throttle Motor Starter		Functionality	0.57
448	WBN-2-STR-046-0056A-S	TDAFW Trip/Throttle Motor Starter		Functionality	0.57
449	WBN-1-FSV-68-394	Reactor Vessel Head Vent Isolation Valve		Screened	> 0.5
450	WBN-1-FSV-68-397	Reactor Vessel Head Vent Throttle Valve		Screened	> 0.5
451	WBN-2-FSV-68-395	Reactor Vessel Head Vent Isolation Valve		Screened	> 0.5
452	WBN-2-FSV-68-396	Reactor Vessel Head Vent Throttle Valve		Screened	> 0.5