Nebraska Public Power District
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NLS2016048
August 26, 2016

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Nebraska Public Power District's Final Six-Month Status Report in Response to 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)
Cooper Nuclear Station, Docket No. 50-298, DPR-46

References:

1. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012

2. NRC Interim Staff Guidance JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," Revision 1, dated January 22, 2016

3. NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 2, dated December 2015

4. NPPD Letter, "Initial Status Report in Response to 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)," dated October 29, 2012

5. NPPD Letter, "Overall Integrated Plan in Response to 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)," dated February 28, 2013

6. NRC Letter, "Cooper Nuclear Station – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC No. MF0972)," dated February 11, 2014

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A151
NRR

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued an Order (Reference 1) to Nebraska Public Power District (NPPD). Reference 1 was immediately effective and directs NPPD to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 2 endorsed industry guidance document Nuclear Energy Institute 12-06, Revision 2 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided NPPD's initial status report for Cooper Nuclear Station (CNS) regarding mitigation strategies. Reference 5 provided CNS' Overall Integrated Plan for diverse and flexible coping strategies (FLEX).

Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provides direction regarding the content of the status reports. The purpose of this letter is to provide the final six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. Attachment 1 of this submittal provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any. Attachment 2 provides NPPD's response to the interim staff evaluation (ISE) confirmatory items contained in Reference 6 and Attachment 3 contains sketches associated with an ISE confirmatory item response.

This letter contains no new regulatory commitments.

Should you have any questions regarding this report, please contact Jim Shaw, Licensing Manager, at (402) 825-2788.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 8/26/16

Sincerely,

Oscar A. Limpias
Vice President - Nuclear and
Chief Nuclear Officer

/bk

Attachments:
1. Nebraska Public Power District's Final Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

2. Nebraska Public Power District's Response to NRC Interim Staff Evaluation Confirmatory Items

3. Sketches (Confirmatory Item 3.2.4.8.C Response)

cc: Regional Administrator, w/attachments
USNRC - Region IV

Director, w/attachments
USNRC - Office of Nuclear Reactor Regulation

Senior Resident Inspector, w/attachments
USNRC - CNS

Cooper Project Manager, w/attachments
USNRC - NRR Plant Licensing Branch IV-2

NPG Distribution, w/attachments

CNS Records, w/attachments

Attachment 1

Nebraska Public Power District's Final Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

Introduction

Nebraska Public Power District (NPPD) developed an overall integrated plan (OIP) for Cooper Nuclear Station (CNS) (Reference 1), documenting the diverse and flexible coping strategies (FLEX), in response to Reference 2. This attachment provides the final update of milestone accomplishments since submittal of the sixth status report to the OIP (Reference 3), including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

Milestone Accomplishments

The following milestone(s) have been completed since the submittal of the sixth status report for the OIP, and are current as of August 15, 2016:

- FLEX equipment has been purchased.
- FLEX strategies have been finalized.
- Training plans have been developed.
- On-line modifications and implementing procedures have been completed.
- Walk-throughs and validations have been completed.
- Outage modifications and implementation procedures have been developed.
- Staffing assessment has been completed.

Milestone Schedule Status

The following table provides an update to Attachment 2 of the OIP. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

The revised milestone target completion dates do not impact the Order implementation date.

Milestone	Target Completion Date	Status	Revised Target Completion Date
60-day Status Update	October 2012	Complete	
Submit Overall Integrated Plan	February 2013	Complete	
6-month Status Update	August 2013	Complete	
6-month Status Update	February 2014	Complete	

Milestone	Target Completion Date	Status	Revised Target Completion Date
Regional Response Center Operations	September 2014	Complete	
Develop Storage Plan	May 2014	Complete	
Purchase FLEX Equipment	June 2016	Complete	
Refine Strategies (post-NRC review)	March 2016	Complete	
Issue Maintenance Procedures (for FLEX equipment)	June 2016	Started	October 2016
6-month Status Update	August 2014	Complete	
Develop Strategies / Contract with Regional Response Center	September 2015	Complete	
Develop Training Plan	March 2016	Complete	
Implementation Outage 1	Fall 2014	Complete	
Develop Online Mods and Implementing Procedures	March 2016	Complete	
6-month Status Update	February 2015	Complete	
Walk-throughs or Demonstrations	June 2016	Complete	
Implement Training	June 2016	Started	October 2016
6-month Status Update	August 2015	Complete	
Develop Outage Mods and Implementing Procedures	March 2016	Complete	
Implement Online Mods and Procedures	June 2016	Complete	
6-month Status Update	February 2016	Complete	
Perform Staffing Assessment	May 2016	Complete	
6-month Status Update	August 2016	Complete	
Implementation Outage 2	Fall 2016	Not Started	
Implement Outage Mods and Procedures	Fall 2016	Not Started	
Implement Training Updates	Fall 2016	Not Started	
Submit Completion Report	Fall 2016	Not Started	

Changes to Compliance Method

As discussed with the Nuclear Regulatory Commission (NRC) during the onsite audit conducted at CNS from May 23 through May 26, 2016, NPPD has determined it will comply with Nuclear Energy Institute 12-06, Revision 2, dated December 2015.

Need for Relief/Relaxation and Basis for the Relief/Relaxation

NPPD expects to comply with the Order implementation date and no relief/relaxation is required at this time.

Open and Confirmatory Items in the Interim Staff Evaluation

In Reference 4, the NRC issued the Interim Staff Evaluation (ISE) for CNS relating to the OIP. Twenty-three confirmatory items were issued as part of this ISE. There were no open items identified in the ISE. NPPD's responses to the ISE confirmatory items are provided in Attachment 2.

References

The following references support the status update to the OIP described in this attachment:

1. NPPD Letter, "Overall Integrated Plan in Response to 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)," dated February 28, 2013

2. NRC Order Number EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012

3. NPPD Letter, "Nebraska Public Power District's Sixth Six-Month Status Report in Response to 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)," dated February 16, 2016

4. NRC Letter, "Cooper Nuclear Station – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC No. MF0972)," dated February 11, 2014

Attachment 2

Nebraska Public Power District's Response to NRC Interim Staff Evaluation Confirmatory Items

The following table provides Nebraska Public Power District's responses to the confirmatory items identified in the Interim Staff Evaluation for Cooper Nuclear Station (CNS).

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
3.1.1.2.A	Confirm that the required debris removal equipment remains functional and deployable to clear obstructions from pathways between the FLEX storage locations and deployment locations, after the FLEX storage building locations are finalized.	Each FLEX Storage Building (FSB) will contain a compact tractor equipped with a front end load and pallet fork adapter for removal of smaller debris. Since the tractors are located with the equipment they will be protected and available. Debris on the site would most likely consist of downed power lines/poles, blown off siding, staged materials, and small portable equipment, i.e., air compressors, lighting, welders, etc. which are within the capability of the tractors to move. For larger debris beyond the capability of the small tractors, the site has procured an additional large "pay-loader" to supplement the large John Deere tractor used for snow removal/site maintenance and the heavy material forklift maintained by the warehouse. The large pay-loader (i.e. front-end loader) is stored in the Turbine Building. The Turbine Building has been evaluated to be designed and built to be capable of remaining structurally intact without gross structural failure following a postulated safe shutdown earthquake.
3.1.1.4.A	Confirm the location(s) of the staging area(s) for equipment from the RRC, and the licensee's plans for transportation from the RRC, staging, and on-site deployment is in accordance with the guidance in NEI 12-06, Sections 5.3.4, 6.3.4, 7.3.4, and 8.3.4, or provide an acceptable	SAFER Response Plan for CNS was made effective December 10, 2015, and the National SAFER Response Center was declared operational for CNS. Appendix 4D and Chapter 5 identify and discuss the CNS staging areas. Chapter 6 of the SAFER Response Plan has actions for CNS and SAFER to determine which routes are accessible and if any actions need to be taken. This chapter also addresses staging areas. Additionally, CNS has a letter of agreement with the Nebraska Emergency

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
	alternative to that guidance.	Management Agency concerning implementation of Phase 2 and 3 of the FLEX strategy. Actions would be coordinated by CNS' Emergency Response Organization.
3.1.3.1.A	Confirm that when the FLEX equipment storage building locations are finalized, separation distance and axis of separation is reviewed to confirm that the building locations are consistent with the recommendations in NEI 12-06, Section 7.3.1.	The two FLEX Storage Buildings are located approximately 1770 ft apart on a North-South axis. One is located inside the protected area and one outside the protected area on the Low Level Radwaste Pad. Based on tornado widths from the National Oceanic and Atmospheric Administration's (NOAA) Storm Prevention Center for 1950 – 2011, 1,200 ft should be considered as the minimum separation distance for which further analysis is not required to justify diversity for the sites located in Region 1 and Region 2 as shown in Figure 7-2 of NEI 12-06. Engineering Report 2016-25, "Evaluation of Tornado Pathway and Size for the FLEX Storage Facilities," compared the CNS Updated Safety Analysis Report (USAR) description of tornado path and size to a statistical analysis of all tornados reported by the National Weather Service Storm Prediction Center from 1950 to 2015. Subsets of the NOAA Severe Weather Geographic Information System Data were chosen for evaluation: • Continental United States • 400 mile radius originating at CNS • Four state region consisting of Nebraska, Iowa, Kansas, and Missouri • 250 mile radius originating at CNS • 100 mile radius originating at CNS No notable differences were apparent in any of the data sets that would impact the evaluation. The predominant vector of tornadoes within 250 miles of CNS is 22.2 degrees South of East, there are also a significant portion of tornados that approach directly from the

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
		Southwest; larger tornados move more West Southwest to East Northeast. As two trajectories are prominent in the subsets, both were considered applicable for the evaluation. These trajectories are: • Directly along the Southwest to Northeast line • 22.2 degrees South of East line Based on the analysis, tornado size distribution shows that 90% of all tornados in the data set are less than 200 yards in width. Tornado size was conservatively taken as the USAR defined tornado with a width of 750 ft; based on the trajectories evaluated it has been determined that the minimum separation distance that exists between the facilities is 869 ft which is larger than required. The FLEX Storage Buildings are located in diverse locations; one of the buildings is located next to robust structures including the Radwaste Building, Condensate Storage Tanks, Fire Protection Tanks, Control Building, and to some extent the Reactor Building. The other FLEX Storage Building is located approximately halfway between the Missouri River and the Western bluffs. The FLEX Storage Buildings are adequately separated and diversely located. Therefore, the FLEX Storage Buildings will survive high wind events as described in NEI 12-06.
3.1.4.2.A	Confirm that obtaining makeup water from the Missouri River during an ELAP event adequately addresses NEI 12-06, Section 8.3.2, consideration 3.	The primary source of makeup water during an Extended Loss of AC Power (ELAP) will be a new FLEX well that will not be subject to freezing. In the event that the backup source of water (Missouri River) would need to be used, any ice that forms along the bank can be removed by the site's debris removal equipment. Generally speaking, along rivers and streams, ice formation takes place as frazil ice in the center of a stream and shore ice growth along the borders of the stream.

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
		During the winter, the U.S. Army Corps of Engineers closely monitors ice conditions below Garrison, Oahe and Gavins Point dams and makes reservoir regulation adjustments to lessen the impact of river ice formation.
3.2.1.1.A	Benchmarks must be identified and discussed which demonstrate that Modular Accident Analysis Program (MAAP) is an appropriate code for the simulation of an ELAP event at CNS, consistent with the NRC endorsement (ADAMS Accession No. ML13275A318) of the industry position paper on MAAP.	Generic response has been provided in EPRI Technical Report 3002002749, "Technical Basis for Establishing Success Timelines in Extended Loss of AC Power Scenarios in Boiling Water Reactors Using MAAP4 - A Guide to MAAP Thermal-Hydraulic Models."
3.2.1.1.B	The licensee should demonstrate that the collapsed reactor pressure vessel level remains above Top of Active Fuel and the reactor coolant system cool down rate is within technical specifications limits.	For the representative MAAP run (Case 2), Reactor Pressure Vessel (RPV) water level remains well above top of active fuel (TAF) for the duration of the analysis. The plot (NEDC 14-026, "Review of ERIN Calculation C122140001-11622, "MAAP Analysis to Support Cooper FLEX Strategy,"" Revision 0, Attachment C) shows that the lowest RPV level, calculated by MAAP, was approximately 38 ft above the bottom of the reactor vessel. TAF is located at 29.88 ft. As shown in the plot, the collapsed RPV water level remains at least 8 ft above TAF over the duration of the scenario.
3.2.1.1.C	The licensee should demonstrate that MAAP is used in accordance with Sections 4.1, 4.2, 4.3, 4.4, and 4.5 of the June 2013 position paper (ADAMS Accession No. ML13190A201).	MAAP analysis performed for CNS was carried out in accordance with Sections 4.1, 4.2, 4.3, 4.4, and 4.5 of the June 2013 position paper, EPRI Technical Report 3002001785, "Use of Modular Accident Analysis Program (MAAP) in Support of Post-Fukushima Applications." Preparation and Review of the MAAP analysis is conducted under engineering training certification guide ENANRM08.
3.2.1.1.D	The licensee must identify, in using MAAP, the subset of key modeling parameters cited from Tables 4-1 through 4-6 of the "MAAP Application Guidance, Desktop	The modeling parameters and choices for key models are provided in NEDC 14-026, Attachment C. CNS-specific inputs were used for the plant-dependent MAAP input parameters. EPRI-recommended MAAP input values were used for input parameters identified to control the

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
	Reference for Using MAAP Software, Revision 2" (Electric Power Research Institute Report 1020236, available at www.epri.com). This should include response at a plant-specific level regarding specific modeling options and parameter choices for key models that would be expected to substantially affect the ELAP analysis performed for CNS.	ELAP phenomena, per EPRI Technical Report 3002002749.
3.2.1.2.A	Confirm that the analysis for a long-duration ELAP event shows that the reactor recirculation pump seal leakage value does not exceed the value used in analysis of a 4-hour station blackout event.	The recirculation pump seal leakage is assumed to be 18 gpm per pump for a total of 36 gpm. This is consistent with the assumed pump seal leakage for the standard station blackout. The information provided in Section 4.2 of the ERIN calculation, evaluated by NEDC 14-026, details testing of similar types of pump seals under loss of pump seal cooling conditions with durations ranging from 0.5 hours to 56 hours. In all tests, the resulting pump seal leakage remained below 5 gpm. The ERIN calculation concludes that the limited operating experience suggests the assumed leakage of 18 gpm per pump is a reasonably conservative estimate. Based on the information and conclusion of the ERIN calculation, the assumed leakage of 18 gpm per reactor recirculation pump and the total assumed leakage of 66 gpm are reasonable and acceptable.
3.2.1.3.A	Confirm that the method for transferring water from the hotwells to the ECSTs, including flow path, valves, pumps, and related equipment, when developed, is reliable.	Change Evaluation Document (CED) 6037045, "Mechanical Connections (Fukushima FLEX Modification)" will install a new pump, piping and connections to allow transferring the hotwell to the Emergency Condensate Storage Tanks (ECST). Power for the new pump will be provided by a FLEX generator through a fused disconnect separate from the plant's electrical system. New piping will be run from the condenser area of the Turbine Building up to the 903 level where it will terminate in a hose (Storz) connection. New piping will also be run in the Control Building from the 903 elevation to the ECSTs in the Control Building basement. A hose will be used to connect the piping in the Turbine Building to the piping in the Control Building.

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
		The Turbine Building is a Class II structure that has been analyzed to confirm that it is capable of remaining structurally intact without gross structural failure following a postulated SSE. The Control Building is a Class I structure that sits on the West side of the Turbine Building. The Diesel Generator Building is a Class I structure that sits on the East side of the Turbine Building. The Turbine Building is a concrete reinforced structure from grade elevation 903'-6" up to the operating floor elevation 932'-6". The operating floor is the ceiling in the area of concern, at the North end of Turbine Building. The operating floor is 12" thick with #6 rebar on the top and bottom and in both directions. The North exterior wall in the area of concern from elevation 903'-6" to 932'-6" is 12" thick with #4 vertical and horizontal rebar spaced at 11". Analysis has shown that walls of similar or lesser construction can withstand the 35' wooden utility pole, 2.2 kip automobile, and 2" heavy pipe missiles. On the North exterior wall is a double door that does not provide missile protection. In the event the tornado missile travels through the door and strikes the ECST transfer pump piping the Suppression Pool, FLEX well, or FLEX pump will be relied upon in place of the hotwell transfer following depletion of the ECST water. The pump and piping are not used during normal operation of the plant and can only be powered from a FLEX generator and are therefore considered reliable. The transfer pump is not seismically qualified and is not relied upon to provide hotwell transfer following a design basis earthquake. The Suppression Pool, FLEX well, or FLEX pump will be relied upon in place of the hotwell transfer following depletion of the ECST water.
3.2.1.3.B	Confirm that the RCIC room heatup evaluation and RCIC room flooding time evaluation are completed with acceptable results.	NEDC 15-002, "Review of Tetra Tech Portable Equipment Calculations in support of CNS FLEX Strategy," documents the review and acceptance of Tetra Tech calculations CALC-194-4933-01, CALC-194-4933-02 and CALC-194-4933-03. These calculations were performed to provide CNS with analyses that establish minimum requirements for portable

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
		equipment during a beyond-design-basis ELAP and Loss of Ultimate Heat Sink (LUHS). The 24 hour temperature profiles of the steam tunnel and Reactor Core Isolation Cooling (RCIC) room, for a postulated ELAP, are shown in Figures 1 through 4 of the calculation. As expected, the temperature of the RCIC room begins to asymptote to steady state values over 24 hours. Simply opening the RCIC room doors is sufficient to maintain room conditions below the temperature operating limits of the equipment in the RCIC room. The Steam Tunnel temperature peaks quickly, and then diminishes as the sensible heat from Main Steam pipes decays away. The Steam Tunnel temperature remains below the equipment limit with no compensatory actions. Therefore, this calculation concludes that no portable ventilation is required to maintain room conditions below the temperature operating limits of equipment in the Steam Tunnel and RCIC room. Appreciable generation of condensate on the floors, walls, and ceiling of the Refueling Floor will not occur until beyond 24 hours when Spent Fuel Pool boiling is postulated to occur and temperature and humidity are high. Any flooding impact on the lower levels from condensate accumulation through the floor and equipment drain system would develop slowly over several days and be spread across the entire Reactor Building footprint. The Equipment and Floor Drain System can be used to mitigate any flooding concern beyond 72 hours by the two sump pumps in the RCIC quad that can be powered from the SAFER generator.
3.2.1.3.C	Confirm that the licensee's staffing assessment is completed and it shows that proposed actions from the FLEX strategies can be completed within the specified time constraints.	The Phase 2 staffing assessment has been completed and shows that the proposed actions from the FLEX strategies can be completed within the specified time constraints with the minimum required staffing.
3.2.1.4.A	Confirm that the Phase 2 FLEX equipment performance criterion, when developed, supports the	FLEX Equipment:

ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
	licensee's mitigation strategies.	• FLEX 175 KW Generator - CED 6037041, "FLEX Electrical Connections," verified the acceptability of the FLEX 175 KW generator. • FLEX 55 KW Generator - CED 6037041 verified the acceptability of the FLEX 55KW generator. • FLEX Portable Pump - NEDC 15-002 verified the acceptability of the FLEX Portable Pump. FLEX Portable Air Compressor - Burns & Roe Calculation CA-0408, dated April 4, 1968, identified that the required volumetric air flow rate to Instrument Air from Service Air is 260 cfm. The FLEX portable air compressor capacity is 300 cfm and Instrument Air is procedurally isolated except for the Reactor Building reliable air header. FLEX Support Guideline (FSG) 5.10FLEX.12, Reactor Building Reliable Air FLEX Operations, provides this direction.
3.2.2.1.A	Confirm that modifications to the reactor building roof hatch provide the ability to maintain adequate SFP area ventilation.	CNS has determined that modifications to the Reactor Building roof hatch are not necessary. Instead, the hatch will be opened manually early in the event. This will be controlled by procedure. The criteria from NEI 12-06, Revision 2, Table C-3 is to provide "Vent pathway for steam & condensate from SFP." Opening the hatch meets those requirements. This is implemented by FSG 5.10FLEX.18, Alternate Reactor Building Ventilation for FLEX Operations. Calculation 194-4959-02, Revision 0, determined the bulk air temperature for the area above the Spent Fuel Pool. The temperature is calculated to reach 125° F by 3 hours. Procedure 5.3SBO, Station Blackout, will direct completion of FSG 5.10FLEX.18 to establish Reactor Building ventilation strategy by 3 hours.
3.2.3.A	Confirm that CNS's containment venting strategy is finalized and that the strategy supports both containment pressure protection and	Emergency Operating Procedures (EOP) and Severe Accident Guidelines (SAG) are being revised to implement Revision 3 of the Emergency Procedures Guidelines (EPG), which will allow implementation of the FLEX strategies. The current strategy is to maintain ~ 5 to 15 psig.

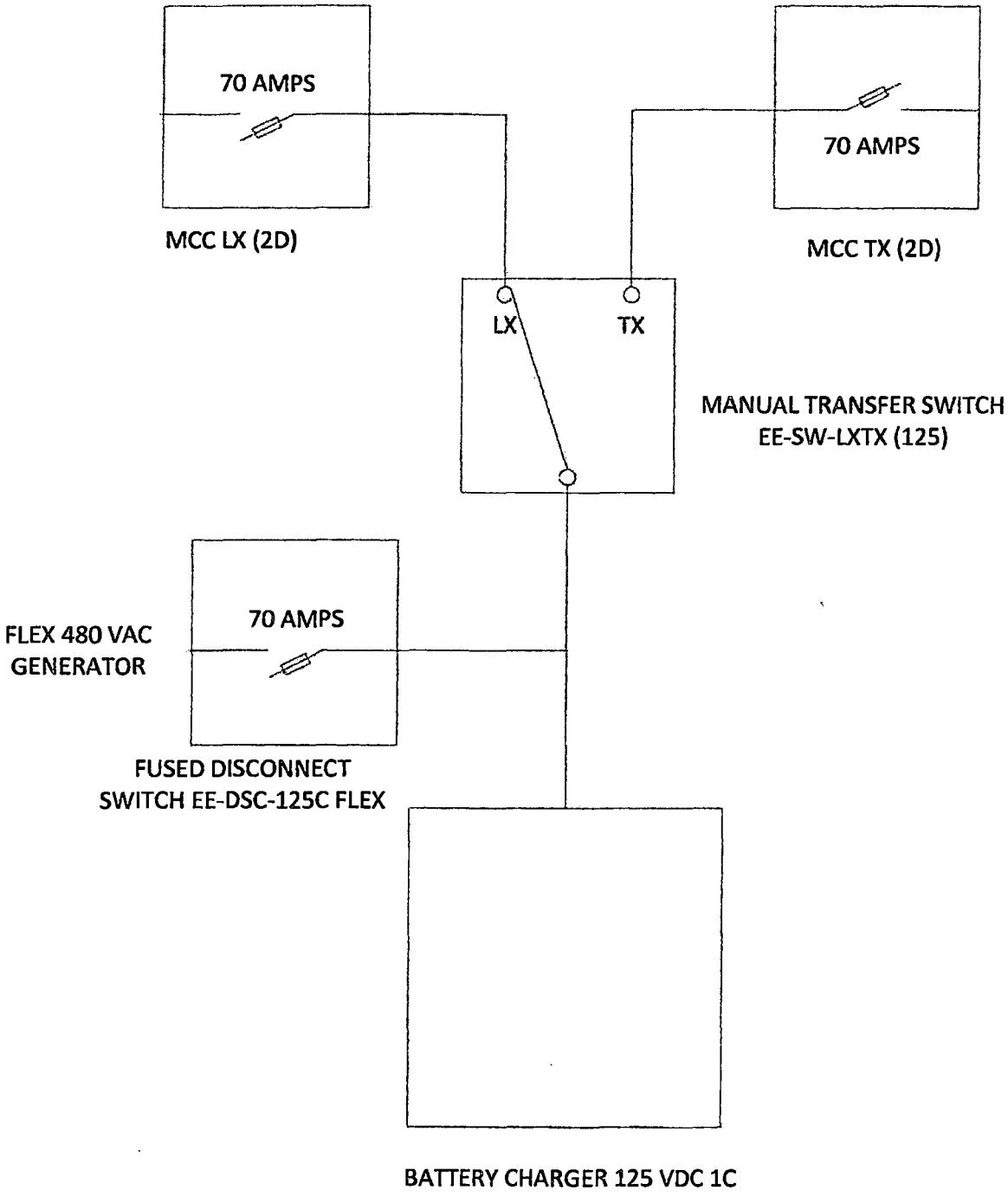
ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
	proposed RCIC and Phase 2 FLEX pump operation.	
3.2.3.B	With regard to maintaining containment, the implementation of BWROG Emergency Procedure Guideline/Severe Accident Guideline, Revision 3, including any associated plant-specific evaluations, must be completed in accordance with the provisions of NRC letter dated January 9, 2014 (ADAMS Accession No. ML13358A206).	EOPs and SAGs are being revised to implement Revision 3 of the EPGs using the EOP/SAG change process.
3.2.4.2.A	Confirm that fan sizing evaluations support adequate ventilation in the main control room, in the RCIC room, and in other applicable plant areas.	NEDC 15-002 documents the review and acceptance of Tetra Tech calculations CALC-194-4933-01, CALC-194-4933-02 and CALC-194-4933-03. These calculations were performed to provide CNS with analyses that establish minimum requirements for portable equipment during a beyond-design-basis ELAP and LUHS. • For the RCIC room, no fans are required, only opening the room door. • For the Steam Tunnel, no fans are required. • For the Control Room, additional ventilation of 11,000 cfm is required.
3.2.4.6.A	Confirm that analyses addressing heat up in areas that might have personnel habitability considerations conform to the guidance in NEI 12-06, Section 3.2.2, Guideline 11, or provide an acceptable alternative to that guidance.	NEDC 15-002 evaluated the room heat up considerations for the FLEX scenario. Only two items required attention; opening the RCIC room door and providing portable ventilation to the main Control Room. FSG 5.10FLEX.18, Alternate Reactor Building Ventilation for FLEX Operations, addresses the RCIC room door. FSG 5.10FLEX.19, Control Building Alternate Ventilation FLEX Operations, addresses Control Room ventilation.

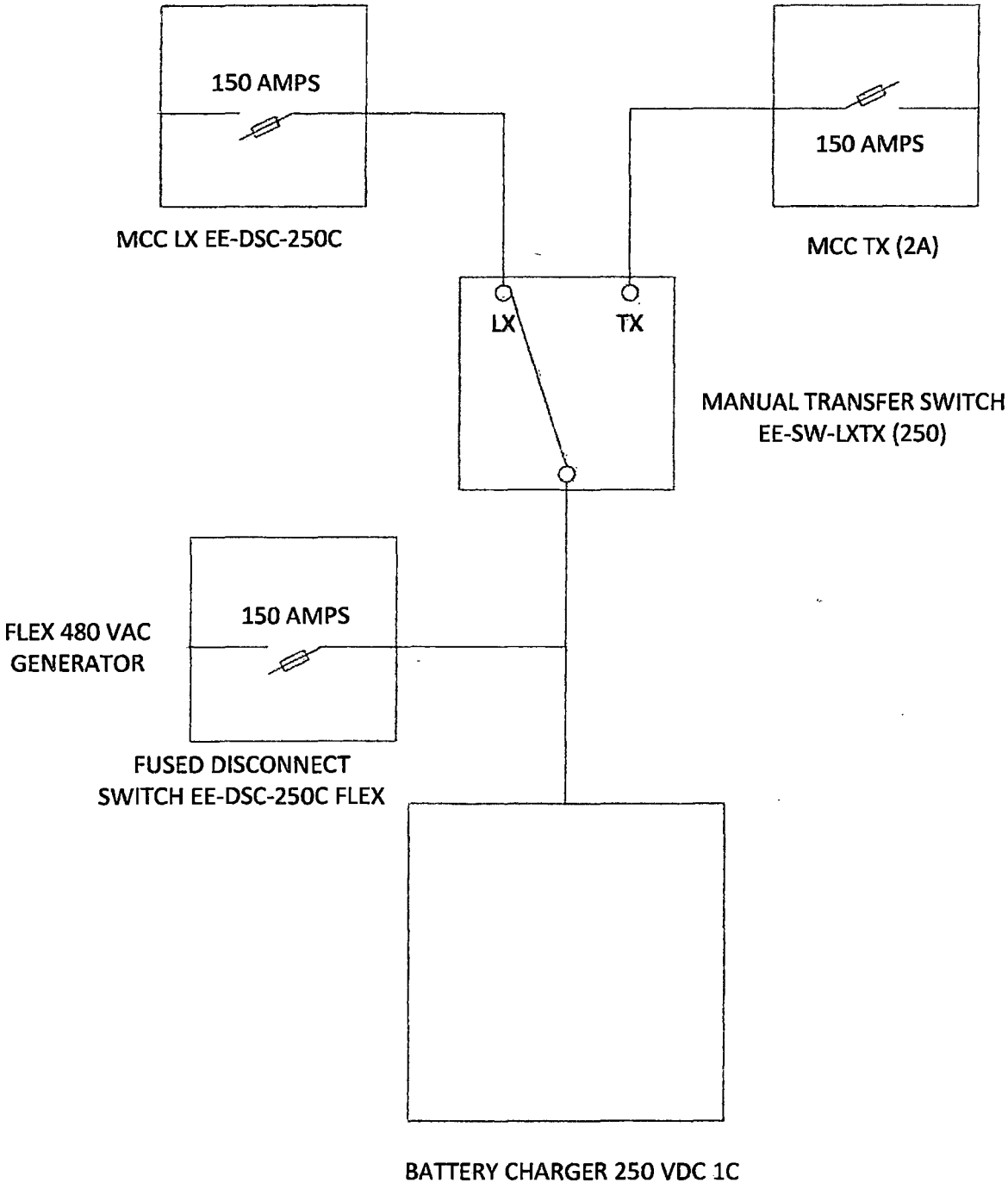
ISE Confirmatory Items		
Item Number	**Description**	**NPPD Response**
3.2.4.7.A	Confirm that the design provisions, as well as operational and protection requirements for the new on-site well/water treatment equipment used for Phase 2 water sources adequately support CNS's proposed ELAP strategies.	Engineering Change 6037044, "FLEX Makeup Water Well," modifies the North Yard Well for any anticipated events that would require the use of its water as Reactor core cooling. These events include seismic and tornadic activity. No water treatment systems will be used with the well. The new well pump will be enclosed in a structure capable of withstanding the design basis tornado and the design basis earthquake. The submersible well pump itself is inherently seismically rugged due to the lack of extended shafts and connections. The existing well casing being repurposed for the new well pump riser pipe has been shown by analysis to be seismically qualified to the design basis earthquake.
3.2.4.8.A	Confirm that adequate electrical interaction and isolation considerations are adequately addressed.	Disconnects are used to provide electrical isolation of the Class 1E electrical systems from the FLEX equipment. The operation of these disconnects are procedurally controlled per the following: • FSG 5.10FLEX.01, "125 VDC DIV 1 FLEX Operations" • FSG 5.10FLEX.02, "125 VDC DIV 2 FLEX Operations" • FSG 5.10FLEX.03, "250 VDC DIV 1 FLEX Operations" • FSG 5.10FLEX.04, "250 VDC DIV 2 FLEX Operations" • FSG 5.10FLEX.07, "4160 "F" Bus Tie-In With Off-Site Generator" • FSG 5.10FLEX.08, "4160 "G" Bus Tie-In With Off-Site Generator"
3.2.4.8.B	Confirm that the sizing of the portable FLEX diesel generators adequately supports CNS's ELAP mitigation strategy.	CED 6037041, "FLEX Electrical Connections," documents the acceptability of the 175 KW and 55 KW portable generators. Calculations for the 6KW generators were not performed, just nameplate ratings were compared to the equipment that is being used (lights, fans and heaters).
3.2.4.8.C	Provide single-line diagrams showing the proposed connections of Phase 2	Sketches are provided in Attachment 3 to this submittal.

<table>
<tr><th colspan="2">ISE Confirmatory Items</th></tr>
<tr><th>Item Number</th><th>Description</th><th>NPPD Response</th></tr>
<tr><td></td><td>and Phase 3 electrical equipment and showing protection information (e.g., breaker, relay, or fuse) and rating for the equipment used when available.</td><td></td></tr>
<tr><td>3.2.4.10.A</td><td>Confirm that the minimum dc voltage and dc load profile for the ELAP have been determined, the minimum dc bus voltage and the associated load profile supports CNS's proposed ELAP mitigation strategy.</td><td>The ELAP load profiles are documented in:
<table>
<tr><th>Calculation</th><th>Component</th><th>CCN</th><th>Description</th></tr>
<tr><td>NEDC 87-131A, "250 VDC Division 1 Load and Voltage Study"</td><td>EE-BAT-250 1A</td><td>13C1</td><td>Added ELAP Scenario battery duration of 9 hours, 30 minutes.</td></tr>
<tr><td>NEDC 87-131B, "250 VDC Division 2 Load and Voltage Study"</td><td>EE-BAT-250 1B</td><td>12C2</td><td>Added ELAP Scenario battery duration of 12 hours.</td></tr>
<tr><td>NEDC 87-131C, "125 VDC Division 1 Load and Voltage Study"</td><td>EE-BAT-125 1A</td><td>15C1</td><td>Added ELAP Scenario battery duration of 9 hours, 5 minutes.</td></tr>
<tr><td>NEDC 87-131D, "125 VDC Division 2 Load and Voltage Study"</td><td>EE-BAT-125 1B</td><td>13C13</td><td>Added ELAP Scenario battery duration of 10 hours, 30 minutes.</td></tr>
</table>
The 175 KW FLEX DG is placed into service at 4 hours to supply the 125VDC and 250VDC battery chargers, which is within the most limiting battery duration of 9 hours, 5 mins. The Phase 2 Staffing Study verified these actions can be completed.</td></tr>
</table>

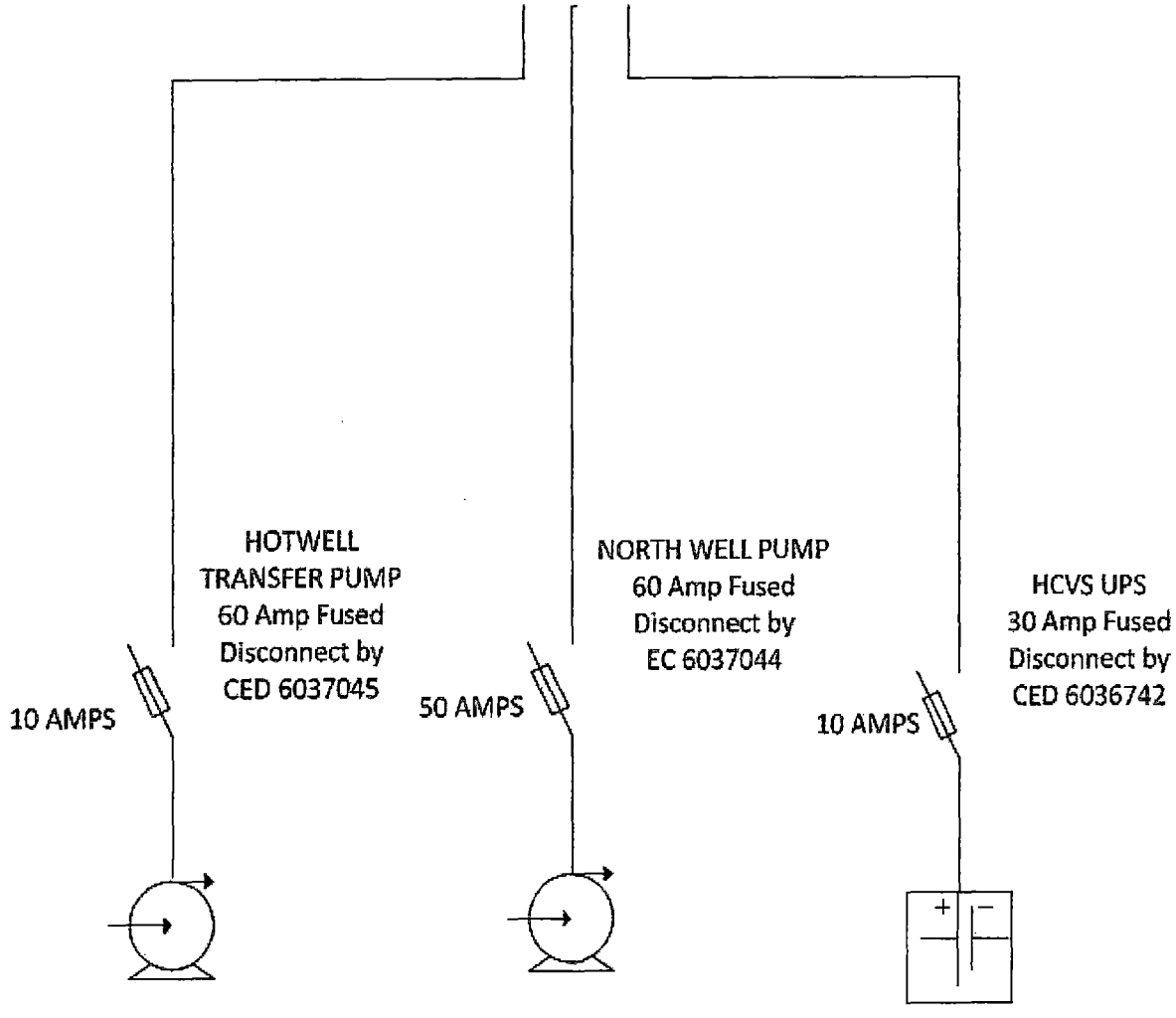
Attachment 3

Sketches (Confirmatory Item 3.2.4.8.C Response)


70 AMPS
MCC LX (2D)
70 AMPS
MCC TX (2D)
LX
TX
MANUAL TRANSFER SWITCH
EE-SW-LXTX (125)
FLEX 480 VAC
GENERATOR
70 AMPS
FUSED DISCONNECT
SWITCH EE-DSC-125C FLEX
BATTERY CHARGER 125 VDC 1C


150 AMPS
MCC LX EE-DSC-250C
150 AMPS
MCC TX (2A)
LX
TX
MANUAL TRANSFER SWITCH
EE-SW-LXTX (250)
FLEX 480 VAC
GENERATOR
150 AMPS
FUSED DISCONNECT
SWITCH EE-DSC-250C FLEX
BATTERY CHARGER 250 VDC 1C

FLEX 480 VAC GENERATOR
(55 KW)



Note: The HCVS UPS and one of the two pumps can be powered at the same time.