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PSEG
Nuclear LLC

Order EA-12-049

LR-N15-0169

AUG 27 2015

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

Hope Creek Generating Station
Renewed Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: PSEG Nuclear LLC's Fifth Six-Month Status Report for the Hope Creek Generating Station 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)

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. PSEG Letter LR-N13-0031, "PSEG Nuclear LLC's Overall Integrated Plan for the Hope Creek Generating Station 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 27, 2013

3. PSEG Letter LR-N15-0022, "PSEG Nuclear LLC's Fourth Six-Month Status Report for the Hope Creek Generating Station 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 18, 2015

4. NRC Letter to PSEG, "Hope Creek Generating Station – Relaxation of the Schedule Requirements For Order EA-12-049 'Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,'" dated May 20, 2014

5. NRC Letter to PSEG, "Hope Creek Generating Station – Relaxation of the Schedule Requirements For Order EA-12-049 'Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,'" dated April 29, 2015

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-049 (Reference 1) to PSEG Nuclear LLC (PSEG). NRC Order EA-12-049 was immediately effective and directed PSEG 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. In accordance with Condition IV.C.1.a of NRC Order EA-12-049, PSEG submitted an Overall Integrated Plan (OIP) for the Hope Creek Generating Station (HCGS) on February 27, 2013 (Reference 2). Condition IV.C.2 of NRC Order EA-12-049 requires six-month status reports to delineate the progress made in implementing the requirements of the Order. Attachment 1 to this letter provides the fifth six-month status report, which summarizes progress made in implementing the requirements of NRC Order EA-12-049 at HCGS since the previous update provided in Reference 3. Attachment 1 reflects the schedule relaxations granted by the NRC in References 4 and 5. The potential need for additional schedule relaxation is described in Section 5 of Attachment 1.

There are no regulatory commitments contained in this letter. If you have any questions or require additional information, please do not hesitate to contact Mr. Brian Thomas at 856-339-2022.

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

Executed on August 27, 2015
(Date)

Sincerely,

Paul J. Davison

Paul J. Davison
Site Vice President
Hope Creek Generating Station

Attachment 1: Hope Creek Generating Station Fifth 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

cc: Mr. William Dean, Director of Office of Nuclear Reactor Regulation
Mr. Daniel Dorman, Administrator, Region I, NRC
Ms. Carleen Parker, Project Manager, NRC
Mr. Justin Hawkins, NRC Senior Resident Inspector, Hope Creek
Mr. Patrick Mulligan, Chief, NJBNE
Mr. Thomas MacEwen, Hope Creek Commitment Tracking Coordinator
Mr. Lee Marabella, PSEG Commitment Coordinator – Corporate

LR-N15-0169

Attachment 1

Hope Creek Generating Station Fifth 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

1 Introduction

PSEG Nuclear LLC (PSEG) developed an Overall Integrated Plan (OIP) (Reference 1) for the Hope Creek Generating Station (HCGS), documenting the diverse and flexible coping strategies (FLEX) in response to NRC Order EA-12-049 (Reference 2). In References 3 through 6, PSEG provided six-month status reports associated with implementation of the requirements of NRC Order EA-12-049. This report is the fifth six-month status report, which provides implementation status and progress since the previous report (Reference 6). This update follows the guidance in Section 13.2 of Nuclear Energy Institute (NEI) Report 12-06 (Reference 7), which states that the six-month status reports should include an update of milestone accomplishments since the previous report, changes to the compliance method, schedule, and the need for relief and the basis for relief, if applicable. This status report reflects the schedule relaxation requests that were approved by the NRC in References 8 and 9.

2 Milestone Accomplishments

The following HCGS FLEX milestones have been completed:

- Submit Overall Integrated Plan - PSEG submitted the HCGS FLEX OIP to the NRC via Reference 1.
- Develop FLEX Strategies - PSEG has developed HCGS FLEX strategies as described in the OIP and has identified design, analysis, procurement, and programmatic actions necessary to achieve compliance with NRC Order EA-12-049. Changes to the FLEX strategies involving changes to methods of compliance with NEI 12-06 are addressed in Section 4.
- Perform Staffing Analysis – PSEG completed the HCGS Phase 2 staffing analysis (Reference 10) as required by the 10 CFR 50.54(f) information request dated March 12, 2012 (Reference 11). The HCGS Phase 2 staffing analysis addresses resources needed to implement FLEX strategies during simultaneous extended loss of AC power scenarios at HCGS and Salem Generating Station, Units 1 and 2.
- Develop Training Plan – PSEG developed training materials and schedules, and has begun training personnel on the HCGS FLEX strategies.
- Develop Strategies/Contract with Regional Response Center (RRC) - PSEG Nuclear is a member of the Strategic Alliance for FLEX Emergency Response (SAFER) and has a SAFER response plan to coordinate delivery of additional equipment from the National SAFER Response Centers (formerly known as Regional Response Centers).
- Develop FLEX Support Guidelines (FSGs) – PSEG developed the draft FSGs to implement the HCGS FLEX strategies.

3 Milestone Schedule Status

The following table provides an update to HCGS FLEX OIP milestones. The table provides the activity status of each item, and whether the original expected completion date has changed. Original target completion dates are based on the original NRC Order EA-12-049 schedule requirement of compliance prior to startup from the spring 2015 refueling outage. The current milestones reflect the schedule relaxations in References 8 and 9.

Milestone	Original Target Completion Date	Activity Status	Revised Target Completion Date
Submit Overall Integrated Plan	Feb 2013	Complete	
Six-Month Status Update	Aug 2013	Complete	
	Feb 2014	Complete	
	Aug 2014	Complete	
	Feb 2015	Complete	
	Aug 2015	Complete With This Report	
	Feb 2016	Not Started	
	Aug 2016	Not Started	
Develop Strategies	May 2013	Complete	
Modifications			
Develop Modifications	Apr 2014	Started	Oct 2015
Implement Modifications	Apr 2015	Started	Oct 2016
FLEX Support Guidelines (FSGs)			
Develop FSGs	Dec 2013	Complete	Apr 2015
Approve FSGs	N/A (milestone added)	Started	Oct 2015
Validation Walk-throughs or Demonstrations of FLEX Strategies and Procedures	May 2015	Started	Oct 2015
Perform Staffing Analysis	Dec 2013	Complete	Dec 2014
Develop Training Plan	Jun 2014	Complete	Jan 2015
Implement Training	Dec 2014	Started	Dec 2015

Milestone	Original Target Completion Date	Activity Status	Revised Target Completion Date
Develop Strategies / Contract with National SAFER Response Center (formerly called "Regional Response Center")	Oct 2013	Complete	Feb 2015
Procure Equipment	Dec 2013	Started	Sep 2015
Create Maintenance Procedures	Jun 2014	Started	Oct 2015
Emergency Preparedness (EP) Communications Improvements	Jun 2014	Complete	May 2015
HC Implementation Outage	Apr 2015	Not Started	Oct 2016
Report to NRC When Full Compliance is Achieved	Aug 2015	Not Started	Jan 2017

4 Changes to Compliance Method

PSEG identified changes to the method of compliance with NEI 12-06 in the February 2015 status report (Reference 6). Additional details of changes to the original FLEX strategies are being provided as part of the mitigation strategies audit process. The information provided in the February 2015 status report is revised as indicated by revision bars, as follows:

Outdoor FLEX Storage Areas and Deployment Strategies

HCGS is using an alternative to the criteria of NEI 12-06 Section 8.3.1, "Protection of FLEX Equipment," which recommends storage of the N FLEX equipment within a structure to provide protection against snow, ice and extreme cold hazards. A comparable level of protection is being provided by outdoor storage locations which consist of the following:

- the HCGS Unit 2 reactor building roof
- west of Salem Generating Station (SGS) – inside the protected area
- east of the SGS oil water separator area – outside the protected area and within the vehicle barrier system
- the northwest corner of the HCGS Unit 2 reactor building – inside the protected area

An additional set of debris removal and towing equipment will be stored at a separate on-site location.

FLEX equipment stored outdoors is designed for extreme high and low temperatures for the site and will be protected as required by the manufacturer, e.g., equipped with direct heating features to ensure it will function when called upon.

The outdoor storage locations provide greater than 1200 feet of separation, generally in a north-south direction, to provide reasonable protection from a tornado event.

Two diesel generators will be pre-staged at their point of deployment on the HCGS Unit 2 reactor building roof. Either of the two DGs is capable of providing the necessary power for the FLEX strategies. The elevation of the HCGS Unit 2 reactor building roof is 132', which is above the flood elevation and provides protection against hurricane missiles (e.g., automobile) originating from ground level. The FLEX DG supports are designed to withstand the design basis hurricane wind load of 108 mph. The DGs are mounted seismically to the HCGS Unit 2 reactor building roof, which is a Seismic Category I structure. Seismic II/I criteria apply to the structural design of the DG supports and anchorage to the concrete roof. The mounting has been analyzed to ensure the DGs will remain available after a seismic event equal to a safe shutdown earthquake (SSE) . In the event of a tornado that disables both diesel generators, an additional diesel generator will be deployed from a location greater than 1200 feet from the affected diesel generators.

Prior to the arrival of a hurricane on site, FLEX equipment to mitigate a flooding event will be moved inside flood-protected areas of HCGS Units 1 and 2.

The HCGS FLEX strategy includes equipment pre-staged at its point of deployment as an alternative to portable Phase 2 equipment as suggested by NEI 12-06. Protection of pre-staged equipment from external hazards combined with diversely located portable equipment provides flexibility to prevent a single event from defeating the FLEX strategy.

Event Timelines

The Phase 2 staffing assessment (Reference 10) includes a sequence of events consistent with event timelines supported by plant-specific MAAP analyses. The final timelines are being incorporated into a HCGS FLEX program document to support the FLEX implementation milestones and will be submitted with a final integrated plan.

GOTHIC Analyses

Plant-specific GOTHIC analyses are being used to establish temperature conditions for personnel habitability and equipment availability, including determination of the need for compensatory measures.

Reactor Core Isolation Cooling (RCIC) Suction Line Connection

The FLEX connection to RCIC suction piping has been determined to be unnecessary and eliminated from the strategy.

RCIC Suction Temperatures

The HCGS FLEX OIP (Reference 1) stated that HCGS will implement Boiling Water Reactor Owners Group (BWROG) recommendations to support RCIC operation with suction fluid temperatures of approximately 230° F. The HCGS FLEX strategy and associated MAAP analyses only credit RCIC operation at suction temperatures up to 215° F consistent with reliable long term RCIC operation.

Torus Water Flow Path

A flow path from the torus to the FLEX header is being established via connection to the core spray system in lieu of the torus water cleanup system.

FLEX Equipment Fuel Oil Storage

On-board diesel fuel storage tank capacities for Phase 2 FLEX equipment are revised and will not support 24 hours of continuous operation without refueling. The tanks will provide sufficient capacity to minimize actions to keep equipment running until refueling is performed using on-site, protected fuel oil sources.

Equipment List

The following table provides an updated list of major FLEX equipment for HCGS:

Table 1 FLEX Equipment List

Phase	Description of Equipment	Strategy
2	(2) 480 VAC Diesel Driven Generators (H1FLX-10-G-2025, H1FLX-10-G-2026)	Core, Containment, SFP, Instrumentation
2	(1) Diesel Driven Pump (H1FLX-10-P-500)	Core, Containment, SFP
2	(2) Motor Driven Pumps (H1FLX-10-P-001, H1FLX-10-P-002)	Core, Containment, SFP
2	(2) Compressors (H1FLX-10-K-001, H1FLX-10-K-002)	Core, Containment
2	(2) FLEX Fuel Oil Pumps (H1FLX-10-P-003, H1FLX-10-P-004)	Core, Containment, SFP
2	(1) Caterpillar 930K Wheel Loader (C1FLX-1FLXE41)	Accessibility
2	(1) Komatsu 250 Wheel Loader (C1FLX-1FLXE43)	Accessibility
2	(2) Kalmar Ottawa 4 x 2 Terminal Tractors (C1FLX-1FLXE44, C1FLX-1FLXE45)	Deployment
2	(2) Forklifts (C1FLX-1FLXE65, C1FLX-1FLXE66)	Accessibility
3	(4) 4.16 kV Generators	Core, Containment, SFP
3	(2) Diesel Driven Pumps	Core, Containment, SFP
3	(1) Water Treatment Plant	Core, SFP
3	(1) Suction Lift Pump	Core, Containment, SFP

Per NEI 12-06, Phase 2 FLEX coping equipment must be stored on site in a configuration that is protected from the applicable hazards and deployable by onsite resources. A combined total of four diesel generators and two diesel pumps are required in Phase 2 for all the reactors on site (SGS Units 1 and 2 and HCGS). SGS requires three diesel generators and one diesel pump. HCGS requires one diesel generator and one diesel pump. These are the minimum required ("N" quantity).

Additionally, a spare diesel generator and diesel pump are required for the N+1 requirement during any BDBEE, which results in a total of five diesel generators and three diesel pumps. Because SGS and HCGS cannot share a generator during the hurricane event due to potential flooding that could restrict equipment movements around the site, six diesel generators are required to meet the N+1 requirement for the hurricane event. Dispersing this equipment such that the six diesel generators and three separate pumps are spread across the site area allows for two diesel generators and a diesel pump to be destroyed by a tornado and still have N equipment survive a tornado. This is explicitly permitted in NEI 12-06 Section 7.3.1.1.c.

Towing and debris removal equipment are stored so that N sets of equipment (one towing vehicle, one debris removal vehicle, and one forklift) will survive all hazards.

Sketches

Updated sketches are provided in Appendix A.

N+1 FLEX Hoses and Cables

PSEG plans to use NEI's recommended alternative to NEI 12-06 regarding N+1 hoses and cables (Reference 27) as endorsed by the NRC in Reference 28.

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

By letter dated April 16, 2014 (Reference 12), PSEG requested schedule relaxation to defer HCGS full compliance with NRC Order EA-12-049, from the HCGS Refueling Outage 19 (H1R19) in spring 2015, to H1R20 in fall 2016. This relaxation request was approved via Reference 8 in order to allow time for implementation of torus venting requirements as needed to support compliance with NRC Order EA-12-049, and is consistent with the schedule for implementation of severe accident capable torus venting requirements in NRC Order EA-13-109 (Reference 17).

In order to allow sufficient time to implement changes to the HCGS FLEX strategies, PSEG requested additional schedule relaxation by letter dated March 11, 2015 (Reference 13), and supplemented by letter dated April 13, 2015 (Reference 14). The NRC granted the requested schedule relaxation on April 29, 2015 (Reference 9), which requires completion of the activities to implement NRC Order EA-12-049, other than those associated with the severe accident capable torus vent, by December 18, 2015.

During implementation of mechanical system modifications to establish the FLEX connections to the Residual Heat Removal (RHR) system, PSEG identified the potential need for additional schedule relaxation from the December 18, 2015 milestone. The modifications include installation of a tie-in with a quick disconnect hose for an alternate FLEX connection to RHR piping in the "A" RHR Heat Exchanger Room, upstream of locked closed valve PV-F051A. PSEG planned to perform this work during reactor operation because the affected section of piping is normally isolated and installation would have had no impact on RHR system availability. However, during the work

clearance process to support installation, PSEG discovered the PV-F051A valve to have seat leakage. The valve seat leakage and accumulation of water within RHR system piping affects installation of the modification such that it would affect RHR system availability and would require entry into a 72-hour Technical Specification action statement if performed during power operation. PSEG is currently evaluating various alternatives including a schedule relaxation request specifically to allow installation of the RHR tie-in for the alternate FLEX connection during the fall 2016 refueling outage.

6 Open Items from Overall Integrated Plan and Draft Safety Evaluation

Resolution of items identified in the NRC's interim staff evaluation (ISE) for HCGS (Reference 18) is being addressed as part of the mitigation strategies audit process. A summary and status of the ISE items are provided below.

ID	Item Ref.	Description	Status
1.	Generic Concern – Battery Life	HCGS is currently working on extending the battery duty cycle and is following the industry position on battery life as outlined in the Nuclear Energy Institute (NEI) white paper dated August 27, 2013 (Reference 19) and endorsed by NRC via letter to NEI dated September 16, 2013 (Reference 20).	Complete - Coping analyses for 125 VDC and 250 VDC batteries have been completed using the NRC-endorsed white paper.
2.	Generic Concern - MAAP	HCGS is using the Modular Accident Analysis Program (MAAP) to complete the development of FLEX timelines and strategies, consistent with the NRC endorsement letter to NEI dated October 3, 2013 (Reference 21).	In progress pending final documentation of MAAP analyses that have been performed consistent with the NRC endorsement letter - supports the 12/18/2015 FLEX implementation milestone.
3.	Generic Concern – Shutdown / Refueling Modes	HCGS will enhance shutdown risk processes and procedures using the supplemental guidance provided in the NEI position paper entitled "Shutdown / Refueling Modes," dated September 18, 2013 (Reference 22) and endorsed by the NRC via letter to NEI dated September 30, 2013 (Reference 23).	In progress with completion scheduled to support the 12/18/2015 FLEX implementation milestone.
4.	Generic Concern – Preventive Maintenance	As part of the development of FLEX maintenance and testing programs, HCGS will use the EPRI Technical Report entitled "Nuclear Maintenance Applications Center: Preventative Maintenance Basis for FLEX Equipment," transmitted to NRC via NEI letter dated October 3, 2013 (Reference 24) and endorsed by NRC letter dated October 7, 2013 (Reference 25).	In progress with completion scheduled to support the 12/18/2015 FLEX implementation milestone.

ID	Item Ref.	Description	Status
5.	Generic Concern – Anticipatory Venting OI 3.2.3.C	With regard to maintaining containment, the implementation of Boiling Water Reactor Owners Group (BWROG) Emergency Procedure Guidelines / Severe Accident Guidelines (EPG/SAG), Revision 3, including any associated plant-specific evaluations, must be completed in accordance with the provisions of NRC letter dated January 9, 2014 (Reference 26).	In progress. PSEG is implementing the containment venting guidance of Revision 3 to the BWROG EPG to support the FLEX strategies by the 12/18/2015 FLEX implementation milestone, and SAG revisions to support severe accident containment venting prior to startup from the fall 2016 outage.
6.	OI 3.2.4.8.E	The use of pre-staged FLEX generators appears to be an alternative to NEI 12-06. The licensee has not provided sufficient information to demonstrate that the approach meets the NEI 12-06 provisions for pre-staged portable equipment. Additional information is needed from the licensee to determine whether the proposed approach provides an equivalent level of flexibility for responding to an undefined event as would be provided through conformance with NEI 12-06.	Complete. PSEG has evaluated the staging location of the FLEX generators as part of the overall storage and deployment strategy with consideration of the applicable site external hazards. The evaluation concludes that FLEX generator storage and deployment provide reasonable assurance that no single external event would defeat the FLEX strategy.
7.	CI 3.1.1.1.A	Confirm licensee's evaluation of the HCGS Unit 2 structures verifies that the structures will meet the considerations described in NEI 12-06, Section 5.3.1 (protection against seismic hazards).	Complete. PSEG has determined the HCGS Unit 2 reactor building, including the floor at grade elevation 102 ft. and the roof areas being used for pre-staged FLEX generators and cable reel enclosures, is structurally adequate for FLEX equipment storage.

ID	Item Ref.	Description	Status
8.	CI 3.1.2.3.A	Confirm that the procedures and programs for deployment of portable equipment in a flooding event conforms to NEI 12-06, Section 6.2.3 considerations 1 (incorporation of actions necessary to support flooding deployment considerations into procedures) and 2 (additional guidance may be required to address the deployment of FLEX for flooded conditions). Additionally, procedures and programs need to address hazard concerns related to high winds, snow, ice and extreme cold and high temperatures.	In progress with procedure issuance scheduled to support the 12/18/2015 FLEX implementation milestone.
9.	CI 3.1.3.1.A	Confirm that the licensee's separation of equipment stored outside is sufficient to preclude all sets of equipment from being damaged by a single tornado.	Complete. PSEG evaluated outdoor storage of FLEX equipment as summarized in Section 4 of this update.
10.	CI 3.2.1.1.A	From the June 2013 position paper (endorsed by the NRC via Reference 21), benchmarks must be identified and discussed which demonstrate that MAAP4 is an appropriate code for the simulation of an ELAP event at your facility.	Same as Item #2, Generic Concern – MAAP.
11.	CI 3.2.1.1.B	Confirm that the collapsed vessel level in the MAAP4 analysis remains above Top of Active Fuel (TAF) and the cool down rate is within technical specification limits.	Same as Item #2, Generic Concern – MAAP.
12.	CI 3.2.1.1.C	Confirm that MAAP4 is used in accordance with Sections 4.1, 4.2, 4.3, 4.4, and 4.5 of the June 2013 position paper (endorsed by the NRC via Reference 21).	Same as Item #2, Generic Concern - MAAP.
13.	CI 3.2.1.1.D	Confirm that in using MAAP4, the licensee identifies and justifies the subset of key modeling parameters cited from Tables 4-1 through 4-6 of the "MAAP4 Application Guidance, Desktop Reference for Using MAAP4 Software, Revision 2" (Electric Power Research Institute Report 1020236). 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 that licensee's plant. Although some suggested key phenomena are identified below, other parameters considered important in the simulation of the ELAP event by the vendor / licensee should also be included as follows: Nodalization, General two-phase flow modeling, Modeling of heat transfer and losses, Choked flow, Vent line pressure losses, and Decay heat.	Same as Item #2, Generic Concern – MAAP.

ID	Item Ref.	Description	Status
14.	CI 3.2.1.1.E	Confirm that the specific MAAP4 analysis case that was used to validate the timing of mitigating strategies in the Integrated Plan is identified and available for NRC staff to view. Alternately, a comparable level of information may be included in the supplemental response. In either case, the analysis should include a plot of the collapsed vessel level to confirm that TAF is not reached (the elevation of the TAF should be provided) and a plot of the temperature cool down to confirm that the cool down is within technical specification limits.	Same as Item #2, Generic Concern – MAAP.
15.	CI 3.2.1.2.A	Insufficient information was provided relative to recirculation pump seal or other sources of leakage used in the ELAP analysis. Additional information is required to evaluate the amount of seal leakage that was used in the HCGS transient analyses and how the seal leakage was determined. This information will need to include the technical basis for the assumptions made regarding the leakage rate through the recirculation pump seals and also other sources. Also include the assumed pressure-dependence of the leakage rate, and whether the leakage was determined or assumed to be single-phase liquid, two-phase mixture, or steam at the donor cell, and discuss how mixing the leakage flow with the drywell atmosphere is modeled.	Same as Item #2, Generic Concern – MAAP.
16.	CI 3.2.1.3.A	The SOE Timeline in the Integrated Plan is tentative. The licensee addressed this issue during the audit process by describing that the SOE timeline presented in the Integrated Plan will be finalized based on plant-specific analysis, procedure development and timeline validation. Confirm that the final SOE timeline is acceptable.	In progress with final documentation of the event timelines to be completed prior to the FLEX implementation milestone of 12/18/15.
17.	CI 3.2.1.3.B	The licensee stated that they are performing a HCGS specific MAAP4 analysis consistent with the NRC endorsement letter to NEI dated October 3, 2013 (ADAMS Accession No. ML13275A318) (Reference 21), to validate the timeline and NEDC-33771-P applicability. Confirm that the results of the evaluation and validation of the SOE timeline are acceptable.	In progress, as part of resolution of the generic concern regarding use of MAAP for containment analyses (Item 2, above), and completion of timeline validation (Item #16, CI 3.2.1.3.A) - supports the 12/18/2015 FLEX implementation milestone.

ID	Item Ref.	Description	Status
18.	CI 3.2.1.4.A	Additional technical basis or a supporting analysis is needed for both FLEX pumping system (one engine/pump located at the SWIS and one motor/pump located in the reactor building) capabilities considering the pressure within the RPV and the loss of pressure along with details regarding the FLEX pump supply line routes, length of runs, connecting fittings, to show that the pumps are capable of injecting water into the RPV with a sufficient rate to maintain and recover core inventory for both the primary and alternate flow paths as well as supplying water [to] the SFP. The licensee addressed these issues during the audit process and stated that this analysis will be performed as part of the design change process. Confirm that the analysis results are acceptable.	Complete. Hydraulic analyses of the diesel-driven and electric motor-driven FLEX pumps show adequate flow capability to support the FLEX strategies.
19.	CI 3.2.1.6.A	Confirm that the results of the final sizing calculations for the SRVs accumulators, the final temperature profile of the drywell, DC coping results and the results of the GOTHIC temperature modeling for the reactor building are acceptable.	In progress, pending final documentation of GOTHIC and MAAP results – supports 12/18/2015 implementation milestone.
20.	CI 3.2.2.A	Confirm that the licensee's final SFP cooling timeline is valid for the required response actions	In progress – supports 12/18/2015 implementation milestone.
21.	CI 3.2.3.A	A site-specific analysis (MAAP) will be performed to determine the correct time to open the HCVS vent and the expected drywell and wetwell temperatures during the BDBEE. This information will be included in a future six-month update. The site-specific analysis needs to include a listing of critical drywell components that may be affected by the elevated temperatures (e.g., drywell seals and penetrations). Confirm that the analysis results are acceptable.	Same as Item #2, Generic Concern – MAAP. MAAP results show primary containment temperatures during an ELAP would be less than those assumed in the OIP.
22.	CI 3.2.3.B	The NRC staff questioned the ability of RCIC to operate with suction temperatures up to 230 degrees Fahrenheit. During the audit process, the licensee addressed this issue by stating that a RCIC durability study is in progress. Confirm that the results are acceptable.	Complete. The FLEX strategies and supporting MAAP analyses only credit RCIC operation at fluid temperatures up to 215 degrees F, consistent with long term RCIC reliability.

ID	Item Ref.	Description	Status
23.	CI 3.2.4.2.A	Confirm that the GOTHIC analysis and/or technical evaluation performed to demonstrate the adequacy of the ventilation provided in all plant strategic areas (including pathways for access to equipment) to support essential equipment operation throughout all phases of an ELAP is acceptable.	In progress. Initial GOTHIC modeling and room temperature calculations are complete and may be refined to reflect additional compensatory measures - supports the 12/18/2015 FLEX implementation milestone.
24.	CI 3.2.4.2.B	Confirm that the effects of elevated or lowered temperatures in the battery room, especially if the ELAP is due to a high or low temperature hazard, have been considered. Confirm the adequacy of the ventilation provided in the battery room to protect the batteries from the effects of extreme high and low temperatures.	In progress – supports the 12/18/2015 FLEX implementation milestone.
25.	CI 3.2.4.2.C	Confirm that the GOTHIC calculations for the battery rooms include the effects of hydrogen accumulation and confirm the actions necessary to prevent unacceptable hydrogen accumulation.	Complete. GOTHIC analyses assume the battery room doors 5541A and 5545A are opened at four hours and show that the hydrogen concentration remains below 1 percent.
26.	CI 3.2.4.4.A	Confirm that the upgrades to the plant communication systems discussed in the licensee communications assessment (References 15 and16) in response to the March 12, 2012, 50.54(f) request for information letter for HCGS and documented in the staff analysis (ADAMS Accession No. ML13130A387) (Reference 11) have been completed.	Complete. PSEG has implemented improvements to radio and satellite phone communications capability.
27.	CI 3.2.4.6.A	Confirm that the GOTHIC modeling and room temperature calculations of plant strategic areas (e.g. MCR, RCIC room, HPCI room (if needed), torus room, and battery rooms including pathways for access to equipment) show acceptable results for personnel habitability and equipment capability.	In progress. Initial GOTHIC modeling and room temperature calculations are complete and may be refined to reflect additional compensatory measures - supports the 12/18/2015 FLEX implementation milestone.
28.	CI 3.2.4.6.B	Confirm that potential high temperature and high humidity in the SFP and fuel handling floor area has been addressed with regard to accessibility.	In progress – supports the 12/18/2015 FLEX implementation milestone.

ID	Item Ref.	Description	Status
29.	CI 3.2.4.8.A	Confirm that the design of the FLEX electrical hookups include the details on how to connect to, and interface with existing plant equipment.	In progress pending approval of procedures. FLEX electrical connections and interfaces with plant equipment are designed for ease of installation using prefabricated connectors or terminal lugs. Supports 12/18/2015 FLEX implementation milestone.
30.	CI 3.2.4.8.B	Confirm that the sizing of the FLEX diesel generators (DGs) is adequate to supply the planned loads.	Complete. Sizing calculations for the Phase 2 and Phase 3 FLEX DGs support steady state operation of the FLEX loads and starting of the largest single load.
31.	CI 3.2.4.10.A	Confirm that the analysis of battery load profiles for the safety related 125 and 250 Vdc batteries for a BDBEE demonstrate satisfactory load profiles and battery life.	Complete - Coping analyses for 125 VDC and 250 VDC batteries have been completed using the NRC-endorsed white paper.

7 Potential Draft Safety Evaluation Impacts

There are no potential impacts to the Draft Safety Evaluation identified at this time.

8 References

1. PSEG letter LR-N13-0031, "PSEG Nuclear LLC's Overall Integrated Plan for the Hope Creek Generating Station 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 27, 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. PSEG Letter LR-N13-0173, "PSEG Nuclear LLC's First Six-Month Status Report for the Hope Creek Generating Station 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 August 22, 2013
4. PSEG Letter LR-N14-0025, "PSEG Nuclear LLC's Second Six-Month Status Report for the Hope Creek Generating Station 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 25, 2014
5. PSEG Letter LR-N14-0184, "PSEG Nuclear LLC's Third Six-Month Status Report for the Hope Creek Generating Station 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 August 26, 2014
6. PSEG Letter LR-N15-0022, "PSEG Nuclear LLC's Fourth Six-Month Status Report for the Hope Creek Generating Station 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 18, 2015
7. Nuclear Energy Institute (NEI) Report NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, dated August 2012
8. NRC Letter to PSEG, "Hope Creek Generating Station – Relaxation of the Schedule Requirements For Order EA-12-049 'Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,'" dated May 20, 2014
9. NRC Letter to PSEG, "Hope Creek Generating Station – Relaxation of the Schedule Requirements For Order EA-12-049 'Issuance of Order to Modify

Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events,'" dated April 29, 2015

10. PSEG Letter LR-N14-0248, "Hope Creek Generating Station's Response to March 12, 2012, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, Enclosure 5, Recommendation 9.3, Emergency Preparedness - Staffing, Requested Information Items 1, 2, and 6 - Phase 2 Staffing Assessment, dated December 9, 2014
11. US Nuclear Regulatory Commission (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
12. PSEG Letter LR-N14-0093, "PSEG Nuclear LLC's Request for Relaxation from NRC Order EA-12-049, 'Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events' - Hope Creek Generating Station," dated April 16, 2014
13. PSEG Letter LR-N15-0055, "PSEG Nuclear LLC's Request for Relaxation from Schedule Requirements of NRC Order EA-12-049, 'Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events' – Hope Creek Generating Station," dated March 11, 2015
14. PSEG Letter LR-N15-0087, "Supplement to the Request for Relaxation from Schedule Requirements of NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design Basis External Events" – Hope Creek Generating Station," dated April 13, 2015
15. PSEG letter LR-N13-0026, "PSEG Nuclear LLC' s Response to NRC Follow-up Letter on Technical Issues for Resolution Regarding Licensee Communication Submittals Associated with Fukushima Near-Term Task Force Recommendation 9.3," dated February 21, 2013
16. PSEG Letter LR-N12-0351, "PSEG Nuclear LLC's Assessment Report for Communications During an Extended Loss of AC Power," dated October 31, 2012
17. NRC Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions (Effective Immediately)," dated June 6, 2013
18. NRC Letter to PSEG, "Hope Creek Generating Station – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC NO. MF0867)," dated February 11, 2014

19. NEI letter to NRC, "EA-12-049 Mitigating Strategies Resolution of Extended Battery Duty Cycles Generic Concern," dated August 27, 2013 (ADAMS Accession No ML13241A186)

20. NRC letter to NEI, "Battery Life White Paper Endorsement," dated September 16, 2013 (ADAMS Accession No. ML13241A188)

21. NRC letter to NEI, "Mitigation Strategies Order EA-12-049, NEI Position Paper: MAAP Endorsement Letter," dated October 3, 2013 (ADAMS Accession No. ML13275A318)

22. NEI Position Paper, "Shutdown / Refueling Modes," dated September 18, 2013 (ADAMS Accession No. ML13273A514)

23. NRC letter to NEI, "Endorsement Letter: Mitigation Strategies Order EA-12-049, NEI Position Paper: Shutdown / Refueling Modes," dated September 30, 2013 (ADAMS Accession No. ML13267A382)

24. NEI letter to NRC, "EA-12-049 Mitigating Strategies Resolution of FLEX Equipment Maintenance and Testing Templates," dated October 3, 2013 (ADAMS Accession No. ML13276A573)

25. NRC letter to NEI, "Maintenance and Testing Endorsement Letter in Regards to Mitigation Strategies Order EA-12-049," dated October 7, 2013 (ADAMS Accession No. ML13276A224)

26. NRC letter to NEI, "Nuclear Energy Institute, BWR Anticipatory Venting Letter in Regards to Order EA-12-049," dated January 9, 2014 (ADAMS Accession No. ML13358A206)

27. NEI letter to NRC, "Alternative Approach to NEI 12-06 Guidance for Hoses and Cables," dated May 1, 2015 (ADAMS Accession No. ML15126A135)

28. NRC letter to NEI "Endorsement of NEI Alternate Approach for Spare Hoses and Cables," dated May 18, 2015 (ADAMS Accession No. ML15125A442)

Appendix A – Hope Creek Generating Station FLEX Sketches

1. Hope Creek FLEX Mechanical Connection Modifications – Master Diagram
2. Hope Creek FLEX Phase 2 Master Diagram (Electrical)
3. Hope Creek FLEX Phase 3 Master Diagram (Electrical)

Black Equipment is Existing

Red Equipment is DCP 80110321

Blue Equipment is DCP 80112012

EL. 201'

EL. 162'

EL. 130'

EL. 102'

EL. 77'

EL. 54'

Existing B.5.b SFP Sprayer

GAMA SCAN ELECTRONICS ROOM 4609

SPENT FUEL POOL

REACTOR VESSEL

Reactor Building

Staircase No. 43-02

EQUIPMENT AIRLOCK ROOM 4323

Fuel Nozzle

ROOF

Propped Open Door

ROOM 5424

2" FLEX Fuel Oil Line

ROOM 5313

ROOM 5315

Outside Truck Bay

'B' Day Tank Drain

FLX-V018

FLEX Fuel Oil Pump 43 gpm, 50 psi

Fuel Nozzle

RHR "B" HX ROOM 4208

FLWX SW Pump (P500) Diesel Driven Pump Rated @ 1300 gpm @400 ft of head Deployed near SWIS

RUN DISCHARGE HOSE THROUGH PROPPED OPEN DOOR

SEE ATTACHMENT M-2

SWIS

Alternate or Phase III Connection

EA-V615 Existing Valve Inside SWIS

Existing 36" SW Header to Reactor Building EL. 86'-6"

EA-V623 Existing Valve Inside SWIS

Primary Phase II Connection

ROOM 107

ROOM 110

A SW Loop

B SW Loop

Strainer

Del. River

FLX-V012

FLX-V011

FLX-V010

Propped Open Door

HV-F017A

HV-F017B

Instrument Gas

KL-V216 Existing Vent Valve

New KL-V253

120 Gallon Compressor Provided by Others

Area 4328

FLX-V008

HV-2234

Fuel Pool Makeup

SACS/RACS Cross-Tie

VENT

BC-V637

BC-V636

Propped Open Door

Atmospheric Pressure

RHR "A" HX ROOM 4214

RHR HX AE-205

(Alternate Injection)

Existing Service Water HV-2238 EA-V554

EA-V658

Portable FLEX Manifold

Existing Service Water HV-F073 EA-V340

2" existing

6" existing

Fuel Pool Makeup Emergency Crossover to RHR System

HV-F075

0-250 PSIG

RACS PUMP AREA ROOM 4209

RHR HX BE-205

TO HV-FO17B & HV-F015B

FLX-V006

PRIMARY CONDENSATE PUMP AREA ROOM 1104

DEMIN WATER PUMP AREA ROOM 1110

AN-PI-101

3" Pipe to DI-Water

AN-V416

0-35 PSIG

AN-V415

FLX-V002

HEADER

6"

BE-PI-101

0-35 PSIG

4" Pipe to Core Spray Header from CST/Torus

BE-V145

BE-V144

1"

FLX-V013

"D" Demin. Water Storage Tank

Condensate Header

AD-V371

AN-V014

AN-V015

AN-V016

AN-V414

OAP-135

FLEX Booster Pump 450 GPM

All New Valves, Fittings, Piping & Hose are 4" unless otherwise noted

TWCU PUMP ROOM 4101A

TORUS ROOM 4102

CORE SPRAY ROOM 4104

Electric Driven Pump Powered From FLEX MCC

1"

FLX-V014

FLX-V003

FLX-V005

6" SS HOSE

Propped Open Door

6" Pump Inlet Piping

Globe Valve

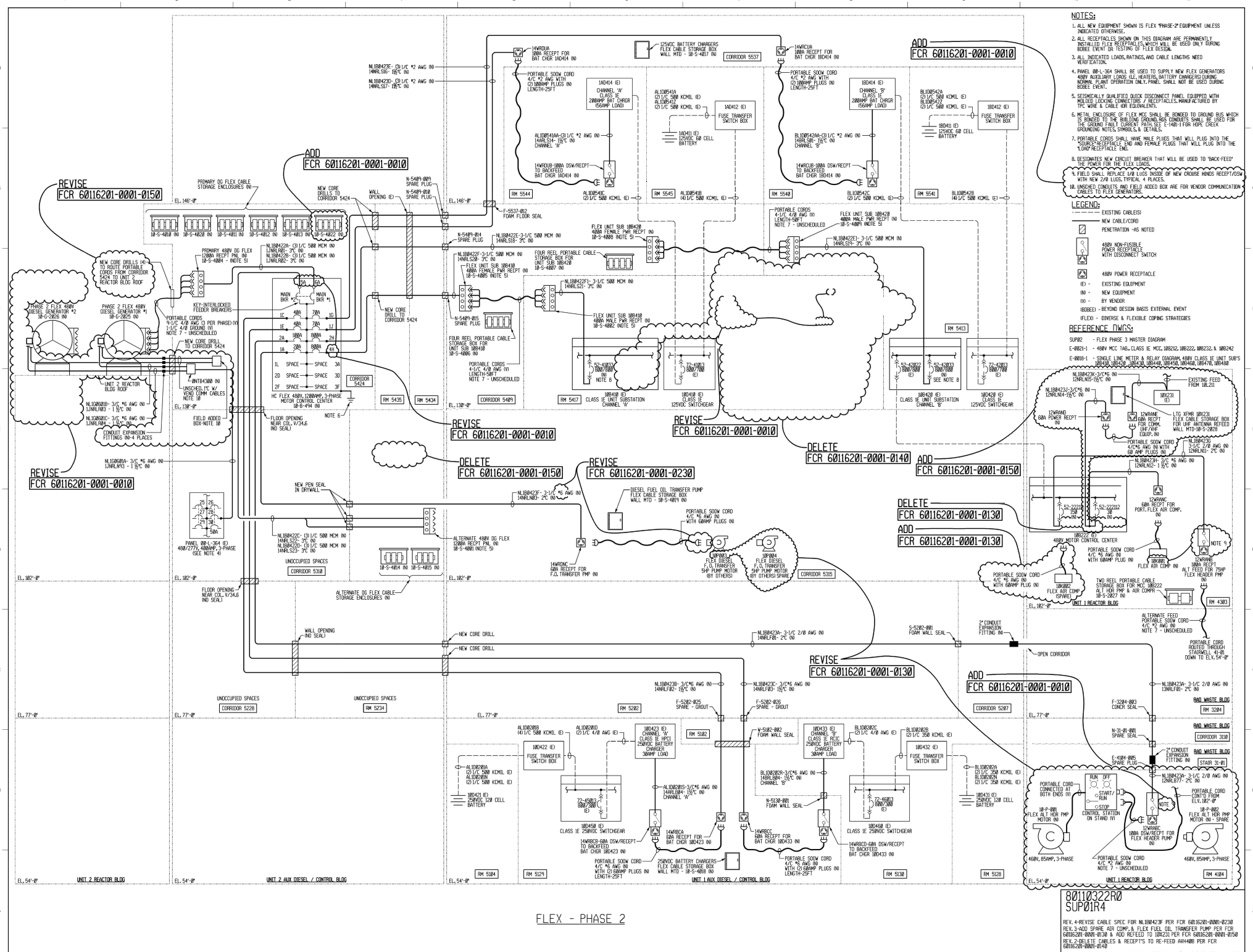
Check Valve

FLEX ALT Header Pump (P200) 450 GPM @ 400 feet of head Electric Driven Pump (75 HP)

Revised Per FCR 80110321-0001-0010

Version 1/27/15

80110321R0
SUP01R1
Hope Creek FLEX Mechanical Connection Modifications – Master Diagram


NOTES:
1. ALL NEW EQUIPMENT SHOWN IS FLEX "PHASE-2" EQUIPMENT UNLESS INDICATED OTHERWISE.
2. ALL RECEPTACLES SHOWN ON THIS DIAGRAM ARE PERMANENTLY INSTALLED FLEX RECEPTACLES, WHICH WILL BE USED ONLY DURING BOBBEE EVENT OR TESTING OF FLEX DESIGN.
3. ALL INDICATED LOADS, RATINGS, AND CABLE LENGTHS NEED VERIFICATION.
4. PANEL 00-L-364 SHALL BE USED TO SUPPLY NEW FLEX GENERATORS 480V AUXILIARY LOADS (I.E. HEATERS, BATTERY CHARGERS) DURING NORMAL PLANT OPERATION ONLY. PANEL SHALL NOT BE USED DURING BOBBEE EVENT.
5. SEISMICALLY QUALIFIED QUICK DISCONNECT PANEL EQUIPPED WITH MOLDED LOCKING CONNECTORS / RECEPTACLES. MANUFACTURED BY TPC WIRE & CABLE OR EQUIVALENT.
6. METAL ENCLOSURE OF FLEX MCC SHALL BE BONDED TO GROUND BUS WHICH IS BONDED TO THE BUILDING GROUND. RGS CONDUITS SHALL BE USED FOR THE GROUND FAULT CURRENT PATH. SEE E-1401-1 FOR HOPE CREEK GROUNDING NOTES, SYMBOLS, & DETAILS.
7. PORTABLE CORDS SHALL HAVE MALE PLUGS THAT WILL PLUG INTO THE "SOURCE" RECEPTACLE END AND FEMALE PLUGS THAT WILL PLUG INTO THE "LOAD" RECEPTACLE END.
8. DESIGNATES NEW CIRCUIT BREAKER THAT WILL BE USED TO "BACK-FEED" THE POWER FOR THE FLEX LOADS.
9. FIELD SHALL REPLACE 1/0 LUGS INSIDE OF NEW CROUSE HINDS RECEPT/DSW WITH NEW 2/0 LUGS, TYPICAL 4 PLACES.
10. UNSCHED CONDUITS AND FIELD ADDED BOX ARE FOR VENDOR COMMUNICATION CABLES TO FLEX GENERATORS.
LEGEND:
EXISTING CABLE(S)
NEW CABLE/CORD
PENETRATION -AS NOTED
480V NON-FUSIBLE POWER RECEPTACLE WITH DISCONNECT SWITCH
480V POWER RECEPTACLE
(E) - EXISTING EQUIPMENT
(N) - NEW EQUIPMENT
(V) - BY VENDOR
(BOBBEE) - BEYOND DESIGN BASIS EXTERNAL EVENT
(FLEX) - DIVERSE & FLEXIBLE COPING STRATEGIES
REFERENCE DWGS:
SUP02 - FLEX PHASE 3 MASTER DIAGRAM
E-0021-1 - 480V MCC TAB., CLASS 1E MCC, 10B212, 10B222, 10B232, & 10B242
E-0018-1 - SINGLE LINE METER & RELAY DIAGRAM, 480V CLASS 1E UNIT SUB'S 10B410, 10B420, 10B430, 10B440, 10B450, 10B460, 10B470, 10B480
REVISE FCR 60116201-0001-0150
REVISE FCR 60116201-0001-0010
ADD FCR 60116201-0001-0010
DELETE FCR 60116201-0001-0150
REVISE FCR 60116201-0001-0230
DELETE FCR 60116201-0001-0140
ADD FCR 60116201-0001-0150
DELETE FCR 60116201-0001-0130
ADD FCR 60116201-0001-0130
REVISE FCR 60116201-0001-0130
ADD FCR 60116201-0001-0010
PHASE 2 FLEX 480V DIESEL GENERATOR #2 10-G-2026 (N)
PHASE 2 FLEX 480V DIESEL GENERATOR #1 10-G-2025 (N)
PORTABLE CORDS 5-1/C 4/0 AWG (3 PER PHASE) (V) 1-1/C 4/0 GROUND (V) NOTE 7 - UNSCHEDULED
NEW CORE DRILL TO CORRIDOR 5424
UNIT 2 REACTOR BLDG ROOF
UNSCHED. 1"C W/ VEND COMM CABLES NOTE 10
FIELD ADDED BOX-NOTE 10
CONDUIT EXPANSION FITTINGS (N)-4 PLACES
PRIMARY DG FLEX CABLE STORAGE ENCLOSURES (N)
NEW CORE DRILLS (4) TO ROUTE PORTABLE CORDS FROM CORRIDOR 5424 TO UNIT 2 REACTOR BLDG ROOF
KEY-INTERLOCKED FEEDER BREAKERS
MAIN BKR #2
MAIN BKR #1
HC FLEX 480V, 12000AMP, 3-PHASE MOTOR CONTROL CENTER 10-B-494 (N)
NOTE 6
FLOOR OPENING NEAR COL. V/34.6 (NO SEAL)
PANEL 00-L-364 (E) 480/277V, 4000AMP, 3-PHASE (SEE NOTE 4)
UNOCCUPIED SPACES
CORRIDOR 5310
ALTERNATE DG FLEX CABLE STORAGE ENCLOSURES (N)
ALTERNATE 480V DG FLEX 1200A RECPT PNL (N) 10-S-4001 (NOTE 5)
NEW PEN SEAL IN DRYWALL
WALL OPENING (NO SEAL)
NEW CORE DRILL
UNOCCUPIED SPACES
CORRIDOR 5228
UNOCCUPIED SPACES
RM 5234
UNIT 2 REACTOR BLDG
UNIT 2 AUX DIESEL / CONTROL BLDG
UNIT 1 AUX DIESEL / CONTROL BLDG
CORRIDOR 5537
CORRIDOR 5409
CORRIDOR 5305
RM 5544
RM 5545
RM 5540
RM 5541
RM 5435
RM 5434
RM 5417
RM 5413
RM 5282
RM 5102
RM 5184
RM 5129
RM 5130
RM 5128
CORRIDOR 5207
CORRIDOR 3110
STAIR 31-01
RM 3204
RM 4303
RM 4104
OPEN CORRIDOR
RAD WASTE BLDG
UNIT 1 REACTOR BLDG
EL. 146'-0"
EL. 138'-0"
EL. 102'-0"
EL. 77'-0"
EL. 54'-0"
FLEX - PHASE 2
80110322R0
SUP01R4
REV. 4-REVISE CABLE SPEC FOR NL1B0423F PER FCR 60116201-0001-0230 & REV. 3-ADD SPARE AUX COMP. & FLEX FUEL OIL TRANSFER PUMP PER FCR 60116201-0001-0130 & ADD REFEED TO 10X231 PER FCR 60116201-0001-0150
REV. 2-DELETE CABLES & RECEPT'S TO RE-FEED AHH408 PER FCR 60116201-0001-0140
REV. 1-REVISE RECEPT'S & MCC, ADD NOTES 9 & 10, & CABLE REEL BOX PER FCR 60116201-0001-0010
REV. 0-HOPE CREEK "FLEX PHASE 2" - MASTER DIAGRAM

NOTES:

1. ALL NEW EQUIPMENT SHOWN IS FLEX "PHASE-3"EQUIPMENT (UNLESS INDICATED OTHERWISE).
2. SEISMICALLY QUALIFIED 2 HOLE NEMA LUGS MOUNTED IN AN ENCLOSURE PROVIDED BY TPC WIRE & CABLE (OR EQUIVALENT).
3. NOT USED
4. DESIGNATES NEW CIRCUIT BREAKER THAT WILL BE USED TO FEED THE PLANT LOADS.
5. SAFER TEAM SHALL PROVIDE THESE PHASE 3 GENERATORS BASED ON THE PIM PROGRAM REQUIREMENTS. THESE PHASE 3 GENERATORS SHALL BE STORED AT THE ARC.
6. EXISTING SECURITY CARD READER CO#5A-OUT IS TO BE ABANDONED IN PLACE PER DCP 8011210L. FIELD SHALL COORDINATE WITH SECURITY TO EITHER REMOVE OR RELOCATE CARD READER & CONDUIT AS REQ'D SO THAT NEW FLEX 4KV RECEPT PANEL CAN BE INSTALLED AT THE BACK WEST WALL OF THE AUX DIESEL BLDG NEXT TO THE REAR TRUCK DOOR.

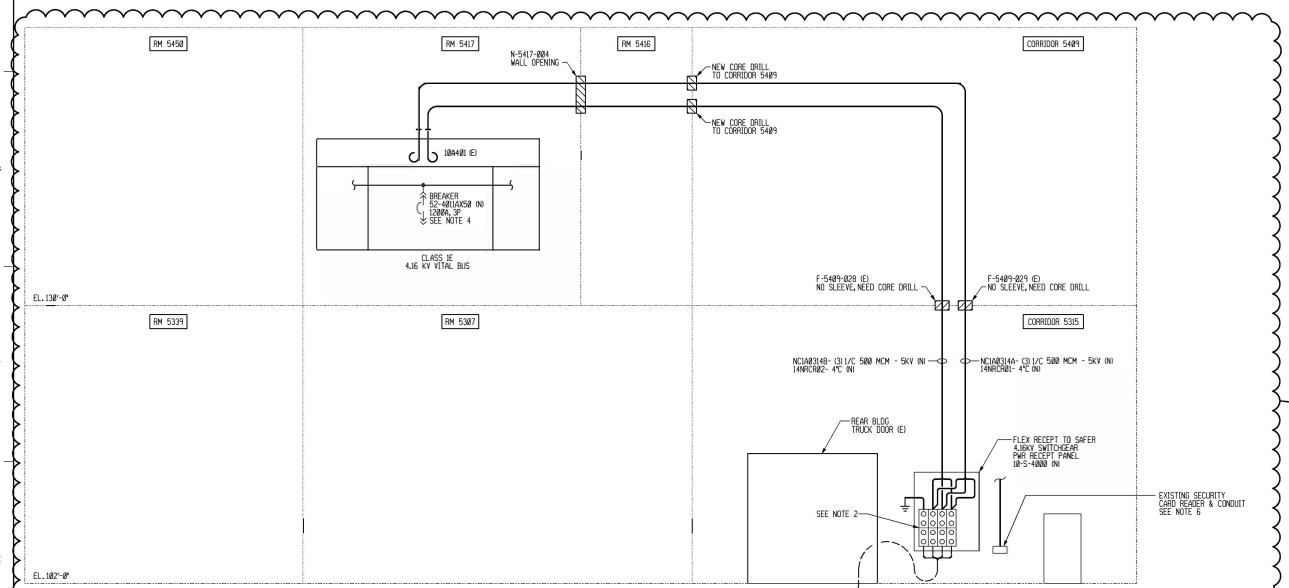
ADD
FCR 80116201-0001-0010

LEGEND:

- - - - - BY OTHERS (NOT IN THE SCOPE OF THIS DCP).
(E) - EXISTING EQUIPMENT
(N) - NEW EQUIPMENT
ARC - REGIONAL RESPONSE CENTER
SAFER - STRATEGIC ALLIANCE FOR FLEX EMERGENCY RESPONSE
PIM - POOLED INVENTORY MANAGEMENT

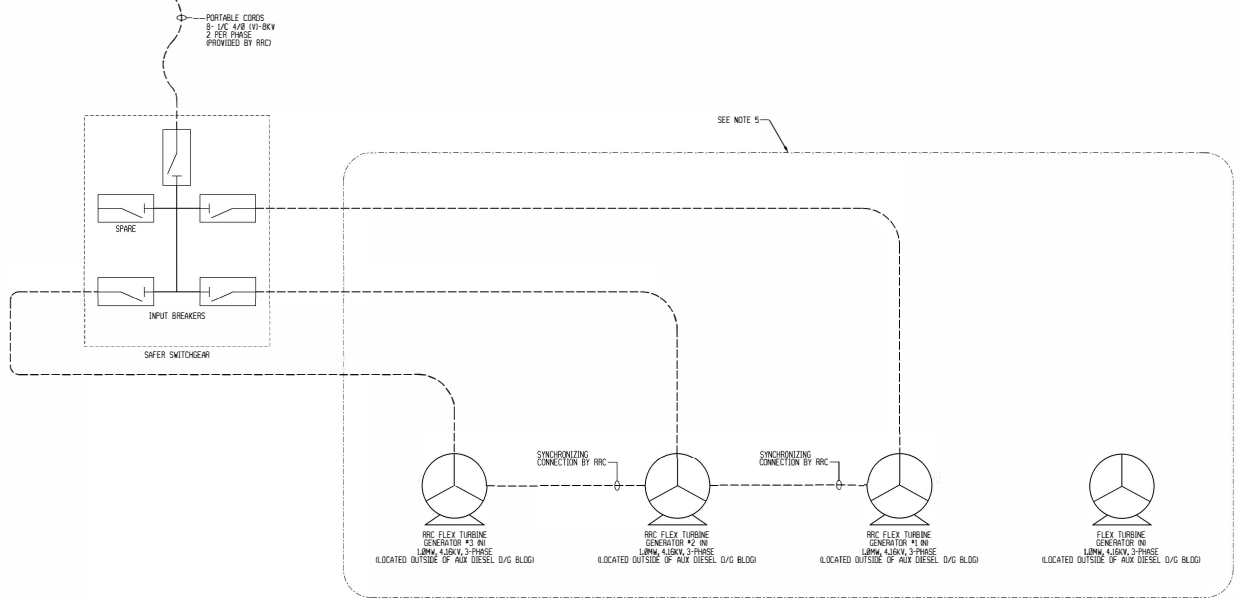
REFERENCE DWGS:

SUP01 - SHEET 1 FLEX "PHASE 2" MASTER DIAGRAM



REVISE
FCR 80116201-0001-0010

UNIT 1 AUX DIESEL / CONTROL BLDG
(LOOKING WEST FROM INSIDE)



FLEX - PHASE 3

80110322RØ
SUP02R1

REV. 1-ADD SEC CARD READER & NOTE 10, REVISE BLDG ELVATION VIEW PER FCR 80116201-0001-0010

REV. Ø-4.16KV BREAKER CONNECTIONS, HOPE CREEK "FLEX PHASE 3" MASTER DIAGRAM