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10 CFR 50.4

Serial: RNP-RA/13-0087

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ATTN: Document Control Desk  
United States Nuclear Regulatory Commission  
Washington, DC 20555-0001

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/RENEWED LICENSE NO. DPR-23

**FIRST 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)**

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, (ADAMS Accession No. ML12056A045)
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 0, dated August 29, 2012, (ADAMS Accession No. ML12229A174)
3. NEI 12-06, *Diverse and Flexible Coping Strategies (FLEX) Implementation Guide*, Revision 0, dated August 2012, (ADAMS Accession No. ML12242A378)
4. Duke Energy Letter, *Carolina Power and Light Company and Florida Power Corporation's 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, (ADAMS Accession No. ML12307A021)
5. Duke Energy 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 26, 2013.

Ladies and Gentlemen:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-049 (Reference 1) to Duke Energy Progress, Inc., formerly known as Carolina Power & Light.

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LRR

Reference 1 was immediately effective and directs Duke Energy 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 endorses industry guidance document NEI 12-06, Revision 0 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided the Duke Energy initial status report regarding mitigation strategies. Reference 5 provided the Duke Energy overall integrated plan for H.B. Robinson Steam Electric Plant (HBRSEP).


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 first 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. The attached report 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.

There are no regulatory commitments made in this submittal. If you have any questions regarding this submittal, please contact Mr. R. Hightower at (843) 857-1329.

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

Executed On: AUGUST 28, 2013

Sincerely,

 COSGROVE FOR

W. R. Gideon  
Site Vice President

WRG/am

Enclosure

1. First Six Month Status Report (Order EA-12-049) H.B. Robinson Steam Electric Plant (HBRSEP), Unit 2, Docket No. 50-261, Renewed License Number DPR-23

cc: Mr. V. M. McCree, NRC, Region II  
Mr. S. P. Lingam, NRC Project Manager, NRR  
NRC Resident Inspector, HBRSEP, Unit No. 2  
Ms. J. A. Kratchman, NRR/JLD/PMB, NRC

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**ENCLOSURE**

**FIRST SIX MONTH STATUS REPORT (ORDER EA-12-049)  
 H.B. ROBINSON STEAM ELECTRIC PLANT (RNP), UNIT 2**

**DOCKET NO. 50-261**

**RENEWED LICENSE NO. DPR-23**

Activity	Start Date	End Date	Status	Responsible Party
Construction	Aug 1974	Started		
Construction	February 1974	Not Started		
Construction	August 1973	Not Started		
Construction	February 1973	Not Started		
Construction	March 1973	Completed		
Complete Modification Project	February 2013	Started		
Construction	February 2013	Not Started		

RNP developed an Overall Integrated Plan (Reference 1 in Section 8), documenting the diverse and flexible strategies (FLEX), in response to NRC Order EA-12-049 (Reference 2 in Section 8). The Overall Integrated Plan was submitted to the NRC on February 26, 2013. This enclosure provides an update of milestone accomplishments including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any, that occurred during the period February 26, 2013 to July 30, 2013 (hereafter referred to as "the update period"). This update is based on an approved formal Engineering Change-Evaluation (88926R1) that is discipline reviewed and design verified.

**2. Milestone Accomplishments**

The following milestone(s) have been completed since the development of the Overall Integrated Plan (Reference 1), and are current as of July 30, 2013.

- Complete Strategy Development
- Submit Integrated Plan
- Complete Modification Identification

**3. Milestone Schedule Status**

The following provides an update to Attachment 2 of the Overall Integrated Plan. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change when design and implementation details are developed. The revised milestone target completion dates do not impact the order implementation date.

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Complete Strategy Development	February 2013	Complete	Date Not Revised
Submit Integrated Plan	February 2013	Complete	Date Not Revised
Submit 6-month Status Update	August 2013	Started	Date Not Revised
	February 2014	Not Started	Date Not Revised
	August 2014	Not Started	Date Not Revised
	February 2015	Not Started	Date Not Revised
Complete Modification Identification	March 2013	Complete	Date Not Revised
Complete Modification Development	February 2015	Started	Date Not Revised
Complete Equipment Procurement	February 2015	Not Started	Date Not Revised



#### 4. Changes to Compliance Method

The following summaries describe changes to the compliance method as documented in the Overall Integrated Plan (Reference 1).

##### Maintain Core Cooling and Heat Removal, PWR Installed Equipment Phase 1

1) RNP OIP p. 11 of 74, para. 4 states:

The Steam Driven Auxiliary Feedwater Pump (SDAFWP) will deliver Condensate Storage Tank (CST) inventory to the SGs. The AFW System is required to be in operation within 27.5 minutes of event initiation, (Reference 9). With AC power lost, the steam supply valves to the SDAFWP must be manually operated. Additionally, with AC power lost, the AFW regulating valves must be manually operated. **To limit the required post-event operator actions, one of the three trains of the steam supply and regulating valves will be modified to operate on DC power and will be capable of being operated from the Control Room, (Open Item 12).**

**UPDATE:**

In lieu of installing a Direct Current Powered Motor Operated Valve (DC MOV) on one steam supply to the Steam Driven Auxiliary Feedwater Pump (SDAFWP) and a DC MOV on one Auxiliary Feedwater (AFW) valve, the current emergency strategy of manually opening the valves will be retained. This is a proven time-critical action in RNP procedures (Ref. 4). Open Item 12 is deleted. Attachment 3, Figure 3 is revised.

2) RNP OIP p. 11 of 74, para. 5 states:

The CST is the source of AFW. The tank and its level instrumentation are seismically qualified, (Reference 10); however, they are not protected from wind or missiles. In order to cope with an ELAP for an indefinite time, the CST inventory must be made-up. Current coping time is approximately 4-5 hours. Normal access to the Ultimate Heat Sink (UHS) (i.e., Lake Robinson), per the restrictions outlined in NEI 12-06, Section 3.2.1.3, is assumed to be unavailable and the UHS can only be accessed using portable equipment. **Modifications will be initiated to harden the CST against wind and missiles, (Open Item 13), and to add an alternate CST which will be sufficiently rugged and qualified to withstand the applicable hazards, (Open Item 14).** This alternate CST may be hard-piped to the existing CST and/or to a new header such that the existing CST could be bypassed in the event it is unavailable. This alternate CST will be located at a higher elevation to allow gravity feed to the plant.

**UPDATE:**

Due to location restrictions and proximity to other equipment, it is not feasible to protect the CST against high winds and missiles. In lieu of hardening the current Condensate Storage Tank (CST) and level instrumentation, the proposed Alternate CST will be sized to allow time for Regional Response Center support without a need to transition to several water sources. Open item 13 is deleted.

3) RNP OIP p. 12 of 74, para. 1 states:

Alternate means of reducing or eliminating potential loss of CST inventory such as modifying valve LCV-1417A, have also been considered. Valve LCV-1417A is a fail-open valve that

provides connectivity between the CST and the condenser hotwells. LCV-1417A will be converted from a fail-open valve to a fail-closed valve to preclude loss of CST inventory, (Open Item 15).

**UPDATE:**

Upon further review and investigation, RNP discovered that a previous attempt to modify LCV-1417A occurred in 2010. RNP concluded that such a modification was not feasible. In addition, the potential loss of CST inventory is accounted for in the proposed Alternate CST's significantly larger volume of approximately 800,000 gallons. In lieu of modifying the hotwell makeup valve (LCV-1417A) from fail-open to fail-closed, the current strategy to manually isolate the valve will be retained (Ref. 4, Step 9). Open Item 15 is deleted. Attachment 3, Figure 2 is revised.

4) RNP OIP p. 12 of 74, **Identify Modifications** states in part:

- One of the three trains of steam supply and regulating valves modified to operate with a DC powered actuator, (Open Item 12).
- Harden the existing CST and CST level instrumentation, (Open Item 13).
- Change LCV-1417A from fail-open to fail-closed, (Open Item 15).

**UPDATE:**

Open items 12, 13, and 15 are deleted as described in Items 1, 2, and 3 above.

**Maintain Core Cooling and Heat Removal, PWR Portable Equipment Phase 2**

5) RNP OIP p. 14 of 74, para. 3 states:

A portable pump will be procured and pre-staged near the condensate pump area, (Open Item 18). To meet N+1 requirements, an additional pump will be stored in a building designed per the criteria of NEI 12-06 Section 11.3, (Open Item 19). These portable pumps will be capable of taking suction from a variety of plant sources (preferred source is the CST) and can be connected directly into the AFW System. Makeup to the CST can be via the six inch emergency fill connection valve, DW-285, (which will be modified to accommodate a standard FLEX fitting), (Open Item 20). An additional connection will be provided for the CST to satisfy alternate criteria, (Open Item 21). A tee-connection will be added to the C AFW Pump discharge line, (Open Item 22), which will allow the portable pump to supply the AFW system.

**UPDATE:**

1. The portable pump for Steam Generator/Reactor Coolant System (RCS) feed capability will not be pre-staged. The pump will be stored in a protected facility. Open Item 18 is deleted.
2. An additional connection will be added to the Alternate CST to satisfy alternate criteria (Open item 21).

6) RNP OIP p. 14 of 74, para. 5 states:

After depressurization is initiated, it is desirable to isolate the Safety Injection (SI) accumulators in order to prevent nitrogen injection into the RCS, which would impede natural circulation cooldown. After an ELAP, however, power to the SI accumulator isolation valves is unavailable. Though the valves can be manually operated, their location inside

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containment precludes accessibility. The valves are powered by MCC 5 and MCC 6 and will be re-powered via switchgear E1 or E2 or directly to the MCC's with portable diesel generators, (Open Item 25).

**UPDATE:**

The RCS cooldown strategy will maintain SG pressures greater than 300 psig until RRC support is provided in Phase 3. The SI Accumulator Isolation valves will not have to be closed until that time. The Safety Injection (SI) Accumulator Isolation Valves will be powered in Phase 3 by Regional Response Center (RRC) supplied diesel generators to be connected to E1 and E2. MCC5 and MCC6 are powered from E1 and E2 respectively; FLEX connections will not be added to MCC5 and MCC6 directly. Open Item 47 was initiated to track the MCC5 and MCC6 alternate power strategy which is not required as a Phase 3 strategy. Open Item 47 is deleted and Open Item 25 is revised account for this strategy. Attachment 3, Figure 6 is revised.

7) RNP OIP p. 14 of 74, para. 6 states:

Reactor core cooling and heat removal with the SGs unavailable during Modes 5 and 6 were also considered. The primary strategy to supply power to the charging pumps is by energizing 480V switchgear E1 or E2. The switchgear will be powered by modifying the current 480V switchgear E1 or E2 to include connection points near the existing diesel generator that will be capable of switching between the existing diesel generator power feeds and the portable FLEX generator power feeds, (Open Item 26). If E1 or E2 are unavailable, the secondary method will entail utilizing a manual transfer switch with portable generator connections that will be installed for a charging pump, (Open Item 27). The source of water for the charging pumps is the RWST. Currently, the RWST is seismically qualified, but is not protected from wind or missiles. The RWST will be hardened to protect against these hazards, (Open Item 41).

**UPDATE:**

1. As noted in items 6) and 7) above, E1 and E2 will not be powered in Phase 2. The same portable pumper that will be used in Modes 1-4 for reactor core cooling and heat removal with the SGs available will be available in Modes 5 and 6. RNP is proposing that modified check valve bonnets with the appropriately sized FLEX connections be installed in the SI pump discharge check valves during outage periods; this would be controlled in the shutdown risk management procedures. The secondary method is accounted for with diverse FLEX connection points and redundant pumper units. Open Item 27 is deleted.

2. The primary source of water is the RWST for all non-missile hazard events. For missile hazard events, a portable boration tanker protected against missiles is selected and will be stored in a protected facility. It is not feasible to harden the RWST due to original design and proximity to other equipment. Open Item 41 is deleted.

8) RNP OIP p. 15 of 74, para. 2 states:

The ultimate source of core cooling water (and the only one capable of providing indefinite functionality) is Lake Robinson. The UHS will withstand a seismic event as the earthen dam is evaluated as seismically robust, (Reference 12). Due to a relatively long distance



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between the lake and the plant, it is desirable to use Service Water (SW) piping as a flow path. The SW System is connected to the AFW System via two locked valves (SW-118 and AFW-24) located off the south SW header which will be opened, if needed, to transfer water from Lake Robinson to the suction of the SDAFWP. Mechanical connections will be added directly into both the south and north SW headers to allow a portable pump to connect, while taking suction directly from Lake Robinson and bypassing the SW pumps, (Open Item 29). **To enable this strategy, the necessary N+1 portable pumps will be stored in a robust structure in a protected location near the intake structure, (Open Item 30).**

**UPDATE:**

1. This strategy is moved to Phase 3 when high capacity, low head pumpers will be supplied by the RRC and connected to the SW headers at the intake structure. The portable pumpers will not be stored in a robust structure near the intake structure. AFW supply will be satisfied by sizing the Alternate CST appropriately based on decay heat removal requirements, Lake Robinson water quality, and RRC response times. Open Item 30 is deleted.
2. Current RNP strategies for Phase 3 will also include a portable pumper and water treatment facilities to replenish the Alternate CST from lake Robinson for indefinite coping. The pumper will be stored in a protected storage facility.

9) RNP OIP p. 15, 16 of 74, **Identify Modifications** states in part:

- Stage N+1 portable pumps at intake for SG makeup via SW piping, (Open Item 30).
- Modify MCC 5 or MCC 6 to allow connection to portable generators, (Open Item 47).
- Harden the RWST, (Open Item 41).

**UPDATE:**

Open items 30, 47, and 41 are deleted as described in Items 6, 7, and 8 above.

**Maintain Core Cooling and Heat Removal, PWR Portable Equipment Phase 3**

10) RNP OIP p. 19 of 74, para. 2 states:

A generator of adequate capacity will be delivered to the site from the Regional Response Center and will be capable of re-powering one train of charging flow. With one emergency train powered, the plant will have greater operational flexibility and the ability to add smaller non-essential loads. Power will be supplied to all necessary equipment during a Beyond Design Basis External Event (BDBEE).

**UPDATE:**

Two large RRC generators (480 VAC, 800-kW) will be connected to emergency busses E1 and E2 in Phase 3. This redundant capacity will supply RCS charging, ventilation, lighting, and the ability to establish long term RCS cooling using installed RHR and CCW pumps combined with portable pumpers to supply SW for CCW cooling.

**Maintain RCS Inventory Control, PWR Portable Equipment Phase 2**

11) RNP OIP p. 23 of 74, para. 2, 3 states:

**Primary Strategy**

The primary recommended Phase 2 method to accomplish inventory control is to utilize the RWST and a charging pump. Currently, the RWST is seismically qualified, but is not

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protected from wind or missiles. The RWST will be hardened to protect against these hazards, (Open Item 41). The primary strategy to supply power to the charging pumps is by energizing 480V switchgear E1 or E2. The switchgear will be powered by modifying the current 480V switchgear E1 or E2 to include connection points near the existing diesel generator that will be capable of switching between the existing diesel generator power feeds and the portable FLEX generator power feeds, (Open Item 26). If E1 or E2 are unavailable, the secondary method will entail utilizing a manual transfer switch that can be used with portable generator connections that will be installed for a charging pump, (Open Item 27). Cables can be connected between the portable diesel generator and primary and interface components by utilizing a quick-connect system. The actual size of the generator will be determined at a later date, (Open Item 42).

#### Alternative Strategy

An alternate method for borated water makeup is to use a portable positive displacement pump connected directly to the Safety Injection headers from the RWST. A mechanical FLEX connection will be added to the RWST and a primary and alternate connection will be added to the SI system, (Open Item 32). Guidance in WCAP 17601 specifying RCS inventory positive displacement pumps sized at >30 gpm at an estimated 1500 psig will be followed, (Reference 6).

#### UPDATE:

1. Installation of Low Leakage Seals (SHEILD) is scheduled in the upcoming R229 outage. RCS makeup will not be required for at least the first 7 days of the event as evaluated by WCAP-17601-P, Reactor Coolant System Response to the Extended Loss of AC Power Event for Westinghouse, Combustion Engineering and Babcock & Wilcox NSSS Designs) (Reference 3, Section 8). RCS makeup capability is not required until phase 3. The 480 VAC emergency busses will be energized using RRC generators in phase 3, allowing for charging pump availability and the closure of the SI accumulator isolation valves. Powering both emergency busses provides for redundancy. The charging pumps will not be required in Phase 2 and portable electric generator connections will not be installed. Open Item 27 is deleted. The borated water sources are the RWST for non-missile hazard events and a portable boration tanker to be stored in a protected facility.
2. RCS boration will be accomplished using portable high pressure pumpers from the Refueling Water Storage Tank (RWST) or portable boration tanks stored in a protected facility. The RWST will not be hardened against wind and missiles. Open Item 41 is deleted. 480 VAC emergency busses E1 and E2 will not be energized in phase 2.

12) RNP OIP p. 23 of 74, **Identify Modifications** states in part:

- Harden the RWST against wind and missiles (Open Item 41)
- Install portable generator connections on a charging pump, (Open Item 27).

#### UPDATE:

Open items 41 and 27, are deleted as described in Item 11 above.

#### Safety Functions Support, PWR Installed Equipment Phase 1

13) RNP OIP p. 41 of 74, para. 2 states:

#### Essential Instrumentation

A significant amount of instrumentation is relied upon to monitor key reactor parameters. These instrumentation channels, powered by station batteries, would be unavailable upon battery depletion. The FLEX strategies to improve battery coping are necessary as a result of the need to extend Phase 1. This will be accomplished by installing supplemental, non-safety related batteries capable of providing an overall eight hour minimum capacity (the current FLEX strategy indicates that the addition of new batteries will best meet the eight hour requirement. Since the implementation of this modification challenges the ability to comply with the two cycle commitment, early detailed engineering will evaluate whether a better design option exists. Any change to the strategy will be updated in the August 28, 2013 submittal.) (Open Item 48).

**UPDATE:**

1. In lieu of installing additional station batteries as backup to the existing vital batteries, RNP is installing a FLEX power connection point to each of the 4 station battery chargers that can be quickly connected to one of 2 diesel generators that will be staged in their protected deployed positions. Preliminary ELAP battery coping analysis indicates there is sufficient time to accomplish this strategy when all equipment and connections are pre-staged.
2. Open Item 48 is deleted.

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

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

**6. Open Items from Overall Integrated Plan and Draft Safety Evaluation**

The following table provides a summary of the open items documented in the Overall Integrated Plan. There are no open items to the Draft Safety Evaluation identified at this time.

Item #	Open Item Description	Status
1.	A Regional Response Centers (RRC) playbook will be developed to support RNP during beyond design basis events.	Started
2.	Figure(s) (site plot plan) showing FLEX equipment storage locations and deployment routes will be provided. Figures will be captured in EC88962 Rev. 1	Started
3.	Deployment strategies will be incorporated into an administrative program.	Not Started
4.	RNP will implement the programmatic controls in accordance with NEI 12-06.	Not Started
5.	Equipment associated with these strategies will be procured as commercial equipment with design, storage, maintenance,	Started

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Item #	Open Item Description	Status
	testing, and configuration control in accordance with NEI 12-06, Section 11.1.	
6.	The unavailability of equipment and applicable connections that directly perform a FLEX mitigation strategy will be managed using plant equipment control guidelines developed in accordance with NEI 12-06, Section 11.5.	Not Started
7.	Programs and processes will be established to ensure personnel proficiency in the mitigation of beyond-design-basis events as developed and maintained in accordance with NEI 12-06, Section 11.6.	Not Started
8.	The FLEX strategies and basis will be maintained in overall FLEX basis documents.	Started
9.	Existing plant configuration control procedures will be modified to ensure that changes to the plant design, physical plant layout, roads, buildings, and miscellaneous structures will not adversely impact the approved FLEX strategies in accordance with NEI 12-06, Section 11.8.	Not Started
10.	Applicable training initiated through the Systematic Approach to Training (SAT) process will be completed prior to the implementation of FLEX.	Started
11.	A contract has been signed between the site and the Pooled Equipment Inventory Company to provide Phase 3 services. A Playbook describing the coordination strategies between RNP and the Regional Response Center will be developed.	Started
12.	To limit the required post-event operator actions, one of the three trains of the steam supply and regulating valves will be modified to operate on DC power and will be capable of being operated from the Control Room.	Strategy Deleted
13.	Modifications will be initiated to harden the CST against wind and missiles.	Strategy Deleted
14.	An alternate CST will be added which will be sufficiently rugged and qualified to withstand the applicable hazards.	Started
15.	LCV-1417A will be converted from a fail-open valve to a fail-closed valve to avoid a failure to close the valve in a timely manner and thereby to preclude loss of CST inventory.	Strategy Deleted
16.	A seismically qualified pressure source capable of supplying 8 hours of SG-PORV operation will be installed.	Not Started
17.	Site-specific procedures and/or FSGs will be developed using industry guidance to address the criteria in NEI 12-06, Section 11.4.	Not Started
18.	A portable pump will be procured and pre-staged near the condensate pump area.	Pre-staging Strategy Deleted

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Item #	Open Item Description	Status
19.	To meet N+1 requirements for Item 18 above, an additional pump will be stored in a building designed per the criteria of NEI 12-06 Section 11.3.	Strategy Deleted
20.	Valve DW-285 to be modified to include FLEX connections.	Not Started
21.	An additional connection will be provided for the Alternate CST to satisfy primary and alternate criteria.	Not Started
22.	A tee-connection will be added to the C AFW Pump discharge.	Not Started
23.	Sufficient nitrogen tanks (for SG PORV) for a 24 hour coping duration will be relocated to a protected location.	Not Started
24.	The existing connection point for the portable nitrogen tank will be modified to include quick-connects.	Not Started
25.	The SI accumulator isolation valves will be re-powered via switchgear E1 or E2 with portable diesel generators.	Not Started
26.	Modify the current 480V switchgear E1 or E2 and existing diesel generator s to include portable diesel generator connection points near the existing diesel generator capable of switching between the existing diesel generator power feeds and portable FLEX generator power feeds.	Not Started
27.	If E1 or E2 are unavailable, the secondary method will entail utilizing a manual transfer switch with portable generator connections that will be installed for a charging pump	Strategy Deleted
28.	To provide primary and alternate connections for portable pumps, an alternate mechanical tee-connection will be provided.	Not Started
29.	Mechanical connections will be added directly into both the south and north SW headers to allow connection of a portable pump.	Not Started
30.	N+1 portable pumps will be procured and stored in a robust structure in a protected location near the intake structure in support of Item 29 above.	Pre-staging Strategy Deleted
31.	During Modes 5 and 6, a portable pump will be used to take suction from the RWST or portable tanker and discharge to the SI header.	Not Started
32.	Primary and alternate mechanical FLEX connections will be added to the SI header.	Not Started
33.	Drain valve (SI-837) at the base of the RWST will be modified to align it to the standardized connection type.	Not Started
34.	Structures to provide protection of the FLEX equipment will be built prior to the FLEX implementation date.	Not Started
35.	The RNP procedures and programs must be developed to	Not Started

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Item #	Open Item Description	Status
	address storage structure requirements, deployment path requirements, and FLEX equipment requirements relative to the hazards applicable to RNP.	
36.	Necessary modifications will be made to existing SSC connections to facilitate FLEX equipment deployment.	Not Started
37.	Necessary modifications will be made to existing onsite fences, structures or security parameters to facilitate flex equipment deployment.	Not Started
38.	The equipment connection points will be designed to withstand the applicable external hazards.	Not Started
39.	The means for connecting the Phase 3 generator will be identified based on the selected onsite location of the generator.	Not Started
40.	Low leakage Reactor Coolant Pump (RCP) seals will be installed.	Not Started
41.	Harden the RWST against wind and missiles.	Strategy Deleted
42.	Actual size of generator to be determined at a later time.	Started
43.	A containment over-pressure and over-temperature analysis will be performed.	Completed Calculation RNP- M/MECH-1877
44.	The resolution of method for SFP level determination is being addressed by the actions taken in response to Order 12-051.	Started
45.	To maintain SFP inventory, a portable pump equipped with suction and discharge lines and compatible hose connections will be available.	Started
46.	The alternate strategy for SFP cooling is to provide makeup via installed SFP piping which will require modifications. Two Emergency Cooling Connections (ECCs) can be used for external filling to robust piping. These connections will be used with portable pumps to draw water from diverse locations directly into the pool.	Not Started
47.	Alternate methods for powering the 480V MCC 5 and 6 require either bus modification to accommodate the diesel generator connector, or the addition of a new diesel generator connection integrated into vertical panel design allowing for full horizontal bus ampacity.	Strategy Deleted
48.	Install supplemental, non-safety related batteries capable of providing an overall eight hour minimum capacity (the current FLEX strategy indicates that the addition of new batteries will best meet the eight hour requirement. Since the implementation of this modification challenges the ability to	Strategy Deleted

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Item #	Open Item Description	Status
	comply with the two cycle commitment, early detailed engineering will evaluate whether a better design option exists.	
49.	To retain SG wide range local level indication throughout an event, the power supply for the A train SG wide range level instrumentation will be moved to either the A or B safety battery.	Not Started
50.	Applicable areas of the Turbine Building will be analyzed or hardened to provide an adequate level of assurance of critical instrumentation availability.	Not Started
51.	Calculations will be performed for extending the time before HVAC is needed to beyond eight hours.	Started
52.	Emergency plant lighting modifications to incorporate LED technology will be initiated thereby increasing the effective life of the battery packs.	Not Started
53.	Additional portable lighting will be procured to facilitate implementation of the FLEX strategies.	Not Started
54.	Strategies to mitigate the loss of communications systems will be developed per NEI 12-06 Section 3.2.2(B).	Not Started
55.	Staffing studies will be performed in accordance with NRC RFI and NEI 12-01 to ensure adequate staffing is available to support, install, and operate FLEX equipment in the time necessary.	Not Started
56.	Phase 2 battery coping will require portable diesel generators to power the battery chargers and the Battery Room exhaust fans in order to remove hydrogen gas accumulation during charging.	Not Started
57.	Manual transfer switches, compatible for quick portable diesel generator connection, will be installed to directly power the battery chargers.	Not Started
58.	Permanent cable and raceway will be installed to make cable deployment directly to the battery chargers and Battery Room exhaust fans feasible.	Not Started
59.	Existing instrument racks will be modified to enable monitoring of key parameters using portable equipment.	Strategy Deleted See Open Item 72
60.	Manual transfer switches with the ability to quick-connect to portable 5kW diesel generators will be installed to provide ventilation to the Battery Rooms.	Not Started
61.	An analysis of HVAC requirements for operating equipment will be performed based on area heat-up times without cooling available for indefinite coping.	Started

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Item #	Open Item Description	Status
62.	Portable fan blowers/generators will be procured and used to provide forced convection.	Started
63.	RNP will acquire a fuel pumping vehicle/trailer that can be used to extract and deliver fuel oil.	Not Started
64.	An analysis to determine the fuel consumption rate of all portable generators/equipment will be performed.	Started
65.	Provisions will be made for an offsite fuel delivery to RNP before all onsite fuel is depleted.	Not Started
66.	Results of the PWROG task will be used in determining the minimum flow rate and pumping capacity required for borated water makeup.	Started
67.	Portable equipment maintenance will be performed in accordance with the requirements of NEI 12-06, Section 11.5.	Not Started
68.	An analysis will be performed to determine the radiation protection equipment requirements.	Not Started
69.	An analysis will be performed to determine the commodities requirements.	Not Started
70.	Transportation equipment will be provided to move large skid/trailer mounted equipment provided from off-site.	Not Started
71.	Additional or revised conceptual sketches will be provided in future updates as engineering packages mature from conceptual design to final design.	Started
72.	Develop procedures, references, and tables to determine key parameters using a portable DVM in the instrument racks.	Started

The following table provides a summary of new open items added to the Overall Integrated Plan.

Item #	Open Item Description	Status
73.	Order EA-12-049, requires that status reports be submitted on six month intervals, following the submittal of the Overall Integrated Plan, until compliance is achieved. Provide the six month status report to licensing for processing.	Complete New Open Item 83 will track the 2/28/14 Update.
74.	Implement the RNP integrated plan for Order EA-12-049 as stated in the submittal. If plans change, ensure that the changes are reflected in future six month status reports that are required to be submitted per the Order. Ensure Open Items listed in RNP-RA/13-0022 (i.e., 588978), are addressed.	Started
78.	Move the existing "C" inverter loads to the "A" inverter and disconnect the "C" inverter from the "A" Station Battery.	Not Started
79.	Revise SAMG and other RNP Emergency procedures to	Started



Item #	Open Item Description	Status
	include FLEX response and related setpoints. Note: This activity / scope does not include revision of other site procedures as they will be revised as part of the mods that impact them. Mod estimates include budget for associated procedure revisions.	
80.	FI-6416 installed per EC83801 is a safety related instrument and is currently used in DSP-002; "Hot Shutdown Using the Dedicated/Alternate Shutdown System" Attachment 6. Ensure use of this instrument is accounted for in the new FSGs.	Not Started
81.	Ensure no credited SBO circuits are removed from operation when determining which additional loads can be shed for a deep load shedding strategy. Refer to 6519-P-101, Station Blackout Coping Analysis Report, Table 1 for credited SBO equipment.	Not Started
82.	When new load shedding strategies are developed, perform manual action walk-throughs and validation (simulated) to demonstrate the proposed operator actions are feasible and achievable.	Not Started
83.	Order EA-12-049 requires that status reports be submitted on six month intervals following the submittal of the overall integrated plan until compliance is achieved. Provide six month status report to licensing for processing.	Not Started

**7. Potential Draft Safety Evaluation Impacts**

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

**8. References**

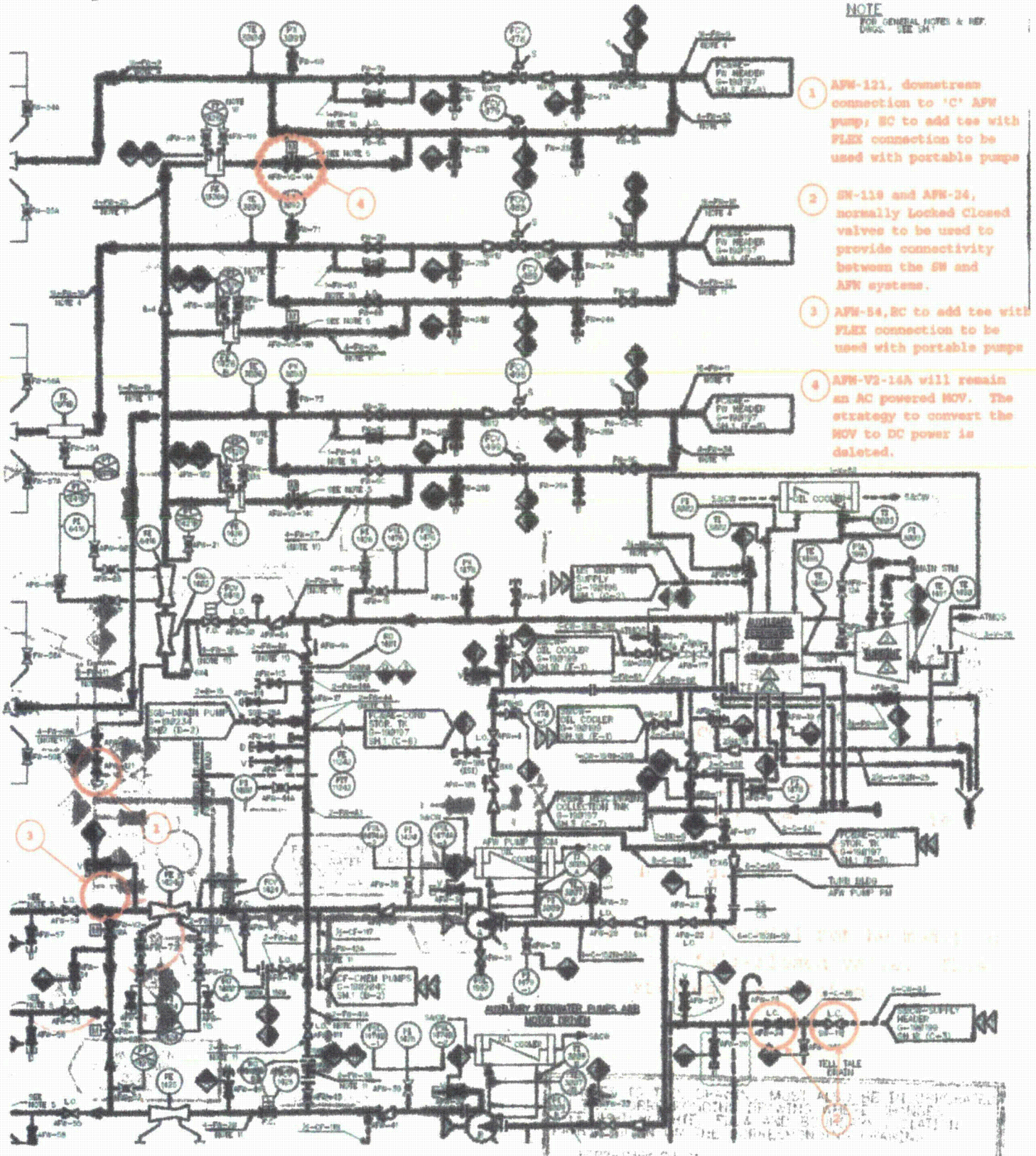
The following references support the updates to the Overall Integrated Plan described in this attachment.

1. Duke Energy 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 26, 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. WCAP-17601-P, Reactor Coolant System Response to the Extended Loss of AC Power Event for Westinghouse, Combustion Engineering and Babcock & Wilcox NSSS Designs
4. Basis Document DSP-002, Hot Shutdown Using The Dedicated/Alternate Shutdown System, Rev. 48

Attachment 3

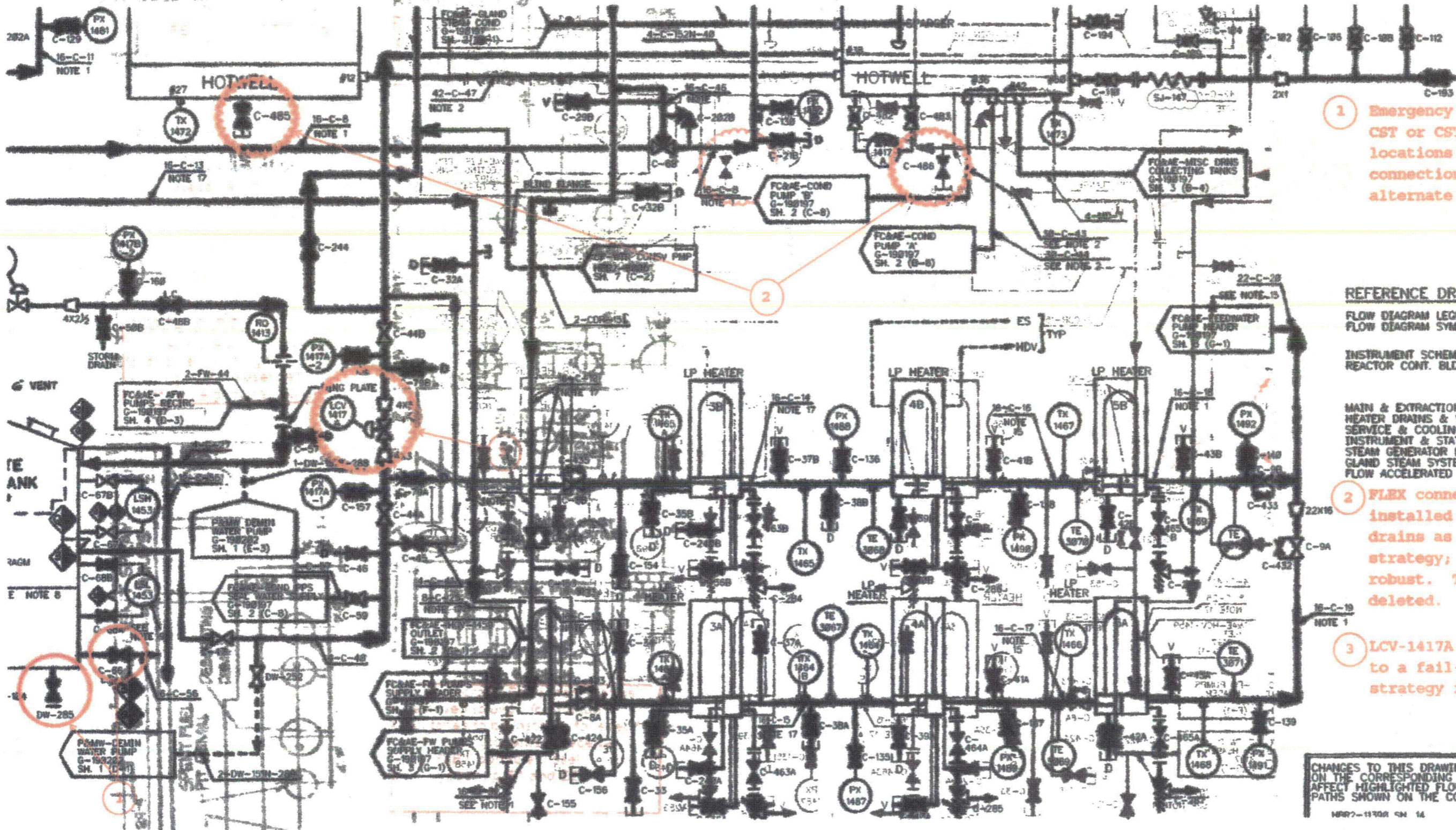
Figure 3, FLEX Connection Locations – Mechanical – Core Cooling – SG Makeup (Open Item 71)

NOTE  
 FOR GENERAL NOTES & REF.  
 DRGS. SEE 341



- 1 AFW-121, downstream connection to 'C' AFW pump; EC to add tee with FLEX connection to be used with portable pumps
- 2 SW-118 and AFW-24, normally Locked Closed valves to be used to provide connectivity between the SW and AFW systems.
- 3 AFW-54, EC to add tee with FLEX connection to be used with portable pumps
- 4 AFW-V2-14A will remain an AC powered MOV. The strategy to convert the MOV to DC power is deleted.

Attachment 3  
 Figure 2, FLEX Connection Locations - Mechanical - Core Cooling - SG Makeup (Open Item 71)



1 Emergency Fill Connection to CST or CST drain; viable locations for EC to add FLEX connection for makeup from alternate sources

REFERENCE DRAWINGS

FLOW DIAGRAM LEGEND & SYMBOLS	HBR2-7963
FLOW DIAGRAM SYMBOLS (E) E SPEC	G-675176
INSTRUMENT SCHEMATICS	A-198381
REACTOR CONT. BLDG. PIPING PENET.	B-198178

MAIN & EXTRACTION STEAM SYSTEM	G-198196
HEATER DRAINS & VENTS SYSTEM	G-198198
SERVICE & COOLING WATER SYSTEM	G-198199
INSTRUMENT & STATION AIR SYSTEM	G-198200
STEAM GENERATOR BLOWDOWN SYSTEM	G-198234
GLAND STEAM SYSTEM	HBR2-8688
FLOW ACCELERATED CORROSION ISO'S	HBR2-11517

2 FLEX connections will not be installed on the hotwell drains as a water source strategy; the hotwells are not robust. This strategy is deleted.

3 LCV-1417A will not be modified to a fail-closed valve. This strategy is deleted.

CHANGES TO THIS DRAWING MUST ALSO BE INCORPORATED ON THE CORRESPONDING DRAWING WHERE CHANGES AFFECT HIGHLIGHTED FLOW AND BOUNDARY ISOLATION PATHS ON THE CORRESPONDING DRAWING.

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Attachment 3  
Figure 6, FLEX Connection Locations – Primary/Secondary Electrical (Open Item 71).

