



**Pacific Gas and
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February 23, 2015

PG&E Letter DCL-15-026

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

10 CFR 50.4

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Pacific Gas and Electric Company's Fourth 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, "Issuance of Order to Modify Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
2. PG&E Letter DCL-13-007, "Pacific Gas and Electric Company's 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 27, 2013

Dear Commissioners and Staff:

On March 12, 2012, the Nuclear Regulatory Commission issued Reference 1 to Pacific Gas and Electric Company (PG&E) directing PG&E 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 Reference 1, Attachment 2.

Pursuant to Reference 1, Section IV, Condition C, PG&E submitted its overall integrated plan for mitigation strategies for beyond-design-basis external events in Reference 2.

Pursuant to Reference 1, Section IV, Condition C.2, and in accordance with the direction provided in NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX)



Implementation Guide," the enclosure to this letter provides PG&E's fourth six-month status report of its overall integrated plan.

PG&E is making no new regulatory commitments (as defined by NEI 99-04).

If you have any questions, or require additional information, please contact Mr. Patrick Nugent at (805) 781-9786.

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

Executed on February 23, 2015.

Sincerely,

Barry S. Allen
Vice President, Nuclear Services

dmfn/SAPN 50466122-15

Enclosure

cc: Diablo Distribution
cc:/enc: Marc L. Dapas, NRC Region IV Administrator
Dan H. Dorman, NRC/NRR Director
Thomas R. Hipschman, NRC, Senior Resident Inspector
Siva P. Lingam, NRR Project Manager

Enclosure
PG&E Letter DCL-15-026

**Pacific Gas and Electric Company's Fourth Six-Month Status Report for the
Implementation of NRC Order EA-12-049**

Pacific Gas and Electric Company's Fourth Six-Month Status Report for the Implementation of NRC Order EA-12-049

1. Introduction

Pacific Gas and Electric Company (PG&E) developed an overall integrated plan (OIP) (Reference 1 [refer to Section 11 of this enclosure for a list of references]), documenting diverse and flexible strategies (FLEX), in response to Nuclear Regulatory Commission (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 (Reference 2). This enclosure provides the fourth update of milestone accomplishments since the submittal of Reference 1, including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

2. Milestone Accomplishments

As of January 31, 2015, PG&E had eight milestone accomplishments since the submittal of PG&E Letter DCL-14-076, "Pacific Gas and Electric Company's Third 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 August 21, 2014 (Reference 3). These milestone accomplishments are that PG&E has completed the procurement of large equipment to support the FLEX strategies for both Phase 2 and Phase 3, started procedure guidance implementation for both Unit 1 and Unit 2 maintenance and testing, as well as the for the Unit 2 strategies. Additionally, the National SAFER Response Center 2 in Phoenix is operational.

3. Milestone Schedule Status

The following table provides an update to the milestone schedule status provided in Reference 3. It provides the activity status of each item, and a revised target completion date where applicable. The target dates are subject to change as design and implementation details are developed.

Additional activities have been added under the Phase 2 and Phase 3 Modifications for the procurement of ancillary equipment.

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

Activity	Target Completion Date	Activity Status	Revised Target Completion Date
Submit 20-day report	Apr 2012	Complete	

Activity	Target Completion Date	Activity Status	Revised Target Completion Date
Submit 60-day status report	Oct 2012	Complete	
Submit Overall Integrated Plan	Feb 2013	Complete	
Submit six-month status updates			
Update 1	Aug 2013	Complete	
Update 2	Feb 2014	Complete	
Update 3	Aug 2014	Complete	
Update 4	Feb 2015	Complete	
Update 5	Aug 2015	Not started	
Update 6	Feb 2016	Not started	
Update 7	Aug 2016	Not started	
Modifications timeline			
Phase 1 Modifications			
a. Design	N/A	N/A	
b. Equipment Procurement	N/A	N/A	
c. Installation	N/A	N/A	
Phase 2 Modifications			
a. Design	12/31/14	Started	2/28/15
b. Large Equipment Procurement	12/31/14	Complete	
c. Ancillary Equipment Procurement	6/30/15	Started	
d. Unit 1 Installation	10/30/15	Not started	
e. Unit 2 Installation	5/31/16	Not started	
Phase 3 Modifications			
a. Design	12/31/14	Started	2/28/15
b. Large Equipment Procurement	12/31/14	Complete	
c. Ancillary Equipment Procurement	6/30/15	Started	
d. Unit 1 Installation	10/30/15	Not started	
e. Unit 2 Installation	5/31/16	Not started	
Procedure guidance implementation			
a. Unit 1 Strategies	10/30/15	Started	
b. Unit 2 Strategies	5/31/16	Started	
c. Unit 1 Maintenance	10/30/15	Started	
d. Unit 2 Maintenance	5/31/16	Started	
e. Unit 1 Testing	10/30/15	Started	
f. Unit 2 Testing	5/31/16	Started	
FLEX storage facilities			
a. Primary Storage Facility	12/31/14	Started	4/1/15
b. Secondary Storage Facility	12/31/14	Started	8/1/15
Staffing analysis			
a. Phase 1			
1. Study Complete	3/29/13	Complete	
2. NRC Submittal	4/30/13	Complete	
b. Phase 2			
1. Study Complete	5/27/15	Not started	

Activity	Target Completion Date	Activity Status	Revised Target Completion Date
2. NRC Submittal	5/27/15	Not started	
Training completion for the strategies			
a. Unit 1	10/30/15	Not started	
b. Unit 2	5/31/16	Not started	
National SAFER Response Center 2 (Phoenix) operational	8/28/14	Complete	
Communications equipment implementation (PG&E Letter DCL-12-110)			
a. Phase 1	12/31/13	Complete	
b. Phase 2	10/27/15	Started	
Unit 1 Walk-throughs or Demonstrations	10/30/15	Not started	
Unit 2 Walk-throughs or Demonstrations	5/31/16	Not started	
Unit 1 FLEX implementation complete	10/30/15	Not started	
Unit 2 FLEX implementation complete	5/31/16	Not started	

4. Changes to Compliance Method

The following identifies changes to Reference 3, as applicable, and the reason for each change. All changes meet applicable NEI 12-06 compliance methods.

Change 1 – “General Integrated Plan Elements”

- (1) “Discussion of time constraints identified in Attachment 1A”
 - (a) Item (14): Changed the reference of the regional response center (RRC) to the national SAFER response center (NSRC), as the center was retitled.
 - (b) Item (26): Changed the time constraint for placing the emergency reactor coolant system (ERCS) make-up pump in service for volume makeup from 39 hours to 44 hours based on evaluation performed in Westinghouse Letter LTR-FSE-14-55, “Assessment of Diablo Canyon Unit 1 and Unit 2 (PGE/PEG) Reactor Coolant System (RCS) Inventory and Shutdown Margin Analyses to Support the Diverse and Flexible Coping Strategy (FLEX) in Support of Setpoint Change,” dated July 10, 2014.
 - (c) Items (28) and (29): Changed the references of the RRC to the NSRC, as the center was retitled.
- (2) “Describe Regional Response Center Plan”

- (a) Changed title of section to “National SAFER Response Center Plan”
 - (b) Changed the references of the RRC to the NSRC, as the center was retitled.
- (3) Updated reference documents 12 and 16 from Reference 3 for current document revisions used in calculations and evaluations.
 - (4) Added reference document 21; Westinghouse Letter LTR-FSE-14-55, “Assessment of Diablo Canyon Unit 1 and Unit 2 (PGE/PEG) Reactor Coolant System (RCS) Inventory and Shutdown Margin Analyses to Support the Diverse and Flexible Coping Strategy (FLEX) in Support of Setpoint Change,” dated July 10, 2014.

Change 2 – “Maintain Core Cooling and Heat Removal Strategy”

- (1) “Phase 1, Provide a brief description of procedures / strategies / guidelines”: Deleted “SBO” from the statement “SBO EOP ECA-0.0” as Emergency Operating Procedure (EOP) ECA-0.0 is not a Station Blackout (SBO) procedure since Diablo Canyon Power Plant (DCPP’s) 10 CFR 50.63 SBO allows one emergency diesel generator (EDG) to be in service, affecting only one Unit.
- (2) “Phase 2, Strategy – Equipment Storage – Warehouse B BDB Storage Facility”: Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (3) “Phase 2, Modifications – Equipment Storage – Warehouse B BDB Storage Facility”: Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (4) “Phase 2, Protection of Connections – Equipment Storage – Warehouse B BDB Storage Facility”: Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (5) “Phase 2, Strategy – Equipment Storage – Lot 11 BDB Storage Facility”: Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary beyond-design-bases (BDB) Storage Facility will be located on the west side of the 500 kV switchyard.

- (6) "Phase 2, Modifications – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (7) "Phase 2, Protection of Connections – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (8) "Phase 3": Changed the reference for the use of forklifts as heavy lifting equipment to front loaders, as front loaders have been purchased for use in FLEX strategies and have comparable capabilities.
- (9) "Phase 3": Clarified that although one emergency auxiliary salt water (EASW) pump per Unit is required to meet FLEX requirements, prudently DCPP has two additional EASW pumps, associated rigid piping segments, and associated strainer assemblies that could be used as backups, if required, that will be stored in a FLEX storage facility. Under the guidance of NEI 12-06, backup Phase 3 equipment is not required, but is available onsite as a prudent measure.
- (10) "Phase 3": Clarified that only one dewatering pump is required per Unit, but that an additional dewatering pump is available onsite as a prudent measure. Under the guidance of NEI 12-06, backup Phase 3 equipment is not required.
- (11) "Phase 3": Changed the references of the RRC to the NSRC, as the center was retitled.
- (12) "Phase 3, Strategy – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (13) "Phase 3, Strategy – Equipment Storage – Warehouse B BDB Storage Facility": Clarified that two dewatering pumps and associated flexible hoses will be stored in the Primary BDB Storage Facility.
- (14) "Phase 3, Modifications – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.

- (15) "Phase 3, Protection of Connections – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (16) "Phase 3, Strategy – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (17) "Phase 3, Strategy – Equipment Storage – Lot 11 BDB Storage Facility": Clarified that two additional EASW pumps, rigid piping segments, and associated strainer assemblies will be stored in the Secondary BDB Storage Facility. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (18) "Phase 3, Modifications – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (19) "Phase 3, Protection of Connections – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (20) "Phase 3, Strategy – Connections": Changed reference for the use of forklifts as heavy lifting equipment to front loaders, as front loaders have been purchased for use in FLEX strategies and have comparable capabilities.

Change 3 – "Maintain RCS Inventory Control Strategy"

- (1) "Phase 2, Strategy – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (2) "Phase 2, Modifications – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as

this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.

- (3) "Phase 2, Protection of Connections – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (4) "Phase 3": Changed the references of the RRC to the NSRC, as the center was retitled.
- (5) "Phase 3, Provide a brief description of procedures / strategies / guidelines": Changed the references of the RRC to the NSRC, as the center was retitled.

Change 4 – "Maintain Containment"

- (1) "Phase 3": Changed the references of the RRC to the NSRC, as the center was retitled.

Change 5 – "Maintain Spent Fuel Pool Cooling"

- (1) "Phase 2, Strategy – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (2) "Phase 2, Modifications – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (3) "Phase 2, Protection of Connections – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (4) "Phase 2, Strategy – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.

- (5) "Phase 2, Modifications – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (6) "Phase 2, Protection of Connections – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (7) "Phase 3": Clarified that although one EASW pump per Unit is required to meet FLEX requirements, prudently DCPP has two additional EASW pumps, associated rigid piping segments, and strainer assemblies that could be used as backups, if required, that will be stored in a FLEX storage facility. Under the guidance of NEI 12-06, backup Phase 3 equipment is not required, but is available onsite as a prudent measure.
- (8) Changed the references of the RRC to the NSRC, as the center was retitled.

Change 6 – "Safety Functions Support"

- (1) "Phase 2, Strategy – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (2) "Phase 2, Modifications – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (3) "Phase 2, Protection of Connections – Equipment Storage – Warehouse B BDB Storage Facility": Retitled equipment storage location from Warehouse B to Primary. The primary storage location will be inside a portion of Warehouse B dedicated for FLEX equipment.
- (4) "Phase 2, Strategy – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.

- (5) "Phase 2, Modifications – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (6) "Phase 2, Protection of Connections – Equipment Storage – Lot 11 BDB Storage Facility": Replaced equipment storage location Lot 11 with Secondary, as this location is being changed during the design change process. The Secondary BDB Storage Facility will be located on the west side of the 500 kV switchyard.
- (7) "Phase 3": Changed the references of the RRC to the NSRC, as the center was retitled.

Change 7 – OIP Table 1, "PWR Portable Equipment Phase 2"

- (1) The performance criteria for the two 480 V diesel-driven generators for battery chargers and telecommunications equipment was updated to 177.1 kW to be consistent with the results from the diesel generator sizing calculation.
- (2) The performance criteria for the two 480 V diesel-driven generators for the ERCS make-up pumps was updated to 106.3 kW to be consistent with the results from the diesel generator sizing calculation.
- (3) Changed the reference in Note (a) from the RRC to the NSRC, as the center was retitled.

Change 8 – OIP Table 2, "PWR Portable Equipment Phase 3"

- (1) The performance criteria for the two 4 kV generator sets (one per Unit) was updated to 967.8 kW to be consistent with the results from the diesel generator sizing calculation.
- (2) Changed the reference in the Note from the RRC to the NSRC, as the center was retitled.

Change 9 – OIP Table 3, "Phase 3 Response Equipment/Commodities"

- (1) Changed the reference in the Note from the RRC to the NSRC, as the center was retitled.

Change 10 – Attachment 1A, “Sequence of Events Timeline”

- (1) Action Item 14: Changed the reference of the regional response center (RRC) to the national SAFER response center (NSRC), as the center was retitled.
- (2) Action Item 26: Changed the time constraint for placing the emergency reactor coolant system (ERCS) make-up pump in service for volume makeup from 39 hours to 44 hours based on evaluation performed in Westinghouse Letter LTR-FSE-14-55, “Assessment of Diablo Canyon Unit 1 and Unit 2 (PGE/PEG) Reactor Coolant System (RCS) Inventory and Shutdown Margin Analyses to Support the Diverse and Flexible Coping Strategy (FLEX) in Support of Setpoint Change,” dated July 10, 2014.
- (3) Action Item 28: Changed the references of the RRC to the NSRC, as the center was retitled.
- (4) Changed the references in Note (b) from the RRC to the NSRC, as the center was retitled.

Change 11 – OIP Attachment 2, “DCPP Units 1 and 2 Implementation Milestone Schedule”

Refer to Section 3 of this Enclosure.

Change 12 – OIP Attachment 3, “Conceptual Sketches”

See Attachment A for all revised Figures:

- (1) Figure 1 Revisions:
 - (a) Figure retitled to “Staging Routes Primary BDB Storage Facility”
 - (b) Routes revised to reflect deployment routes as evaluated in design change
 - (c) Addition of staging areas and deployment routes for the 4 kV generators
- (2) Figure 2 Revisions:
 - (a) Figure retitled to “Staging Routes Secondary BDB Storage Facility”

- (b) Routes revised to reflect deployment routes as evaluated in design change
- (3) Figure 5A was revised to show the staging location of the raw water reservoir (RWR) pump as being located between the reservoirs, as this location was changed during the design change process.
- (4) Figure 6A was revised to show the staging location and hose routes for the Unit 1 emergency auxiliary feed water (EAFW) pumps for steam generators not available through roll-up door 360. This reflects the deployment for the Unit 2 EAFW pumps for steam generators not available.
- (5) Figure 7B was revised to clarify hose routes to pass through door 298-2.
- (6) Figure 8C was revised to clarify deployment hose route for the Unit 1 EAFW pump.
- (7) Figure 20A, "480-Vac Staging and Cable Deployment, Elevation 85'," was revised to reflect the evaluated deployment route.
- (8) Figure 20E, "480-Vac Cable Routing, Elevation 128'," was created to show the 480-Vac cable routing on the 128 foot elevation of the auxiliary building.
- (9) Figure 20F, "480-V Cable Routing, Elevation 104', Unit 1" was created to show the 480-Vac cable routing to the oil lab connection on the 104' elevation of the Unit 1 buttress building.
- (10) Figure 20G, "480-Vac Cable Routing, Elevation 104', Unit 2" was created to show the 480-Vac cable routing to the TSC to repower satellite and radio communications equipment on the 104' elevation of the Unit 2 buttress building.

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

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

6. Open Items from Overall Integrated Plan

The following provides a summary and status of the open items documented in Reference 1. Open items identified as completed in References 3 and 4 require no further update.

OI-1

Required staffing levels will be verified by walkthroughs, tabletops, and simulations of the identified FLEX strategies as a part of the Phase 2 staffing studies conducted in accordance with NEI 12-01.

Status: Not started. The Phase 2 staffing assessment will be completed and submitted to the NRC four months prior to the Unit 1 19th refueling outage, which is currently scheduled to begin in the Fall of 2015 (Reference 7).

OI-6

PG&E will develop procedures to read this instrumentation locally, where applicable, using a portable instrument as required by NEI 12-06, Section 5.3.3.

Status: Procedures are currently scheduled to be issued by October 31, 2015, for Unit 1 and May 31, 2016, for Unit 2.

7. NRC FLEX Audit RAI Updates

PG&E provided its response to NRC FLEX Audit requests for additional information (RAIs) in November 2013. In its response, PG&E committed to provide an update of specific items in the six-month status reports prepared pursuant to NRC Order EA-12-049. RAIs identified as completed in Reference 3 require no further update.

The following provides a revision to a previously submitted NRC FLEX RAI response:

049-RAI-DCPP-072:

Open Item 3.2.4.5A - NEI 12-06, Section 3.2.2, Guideline (8) provides that, "Plant procedures/guidance should identify the portable lighting (e.g., flashlights or headlamps) and communications systems necessary for ingress and egress to plant areas required for deployment of FLEX strategies."

(1) Discuss areas requiring access for instrumentation monitoring (including the main control room) or equipment operation and the lighting needs for these areas. In addition, the DCPP OIP (2) Identify the portable lighting needed for use in the main control room following an extended loss of AC power (ELAP) as well as portable lighting needed in other parts of the plant (consider that the ELAP may occur during or extend into night time hours.)

Update:

In PG&E's response to 049-RAI-DCPP-072, PG&E stated that battery-operated lights (BOLs) are located in the areas of the plant that require equipment

operation or instrumentation monitoring. However, these lights are not being credited for use in these areas as a part of FLEX. Operators will utilize personal lighting instead. The response should be revised as follows:

- “(1) Areas of the Diablo Canyon Power Plant that will need to be accessed for instrumentation monitoring or equipment operation include the pipe racks, auxiliary buildings, fuel handling buildings, turbine buildings, and the main control room. Operators dispatched into the plant to perform these actions will be provided headlamps, flashlights, and BOLs.
- (2) The main control room is equipped with 10 CFR 50, Appendix R BOLs that are seismically qualified (Hosgri) and will function following a seismic event. In addition, portable lighting will be available to supplement the installed BOLs. Control room operators will also have headlamps and flashlights available.”

The following provides a summary of the NRC FLEX RAI status updates:

049-RAI-DCPP-003:

PG&E will provide the storage locations of the debris removal equipment.

Status: This item is complete. Debris removal equipment for FLEX will be stored at both the Primary and Secondary BDB Storage Facilities.

049-RAI-DCPP-010:

PG&E will provide parking locations of the trucks required to support the movement of the FLEX equipment within the required timeframes.

Status: PG&E is evaluating the parking location options for the trucks required to support the movement of FLEX equipment within the required timeframes and will provide the parking locations in a future six-month status update.

8. Interim Staff Evaluation Open and Confirmatory Item Updates

The following provides PG&E’s response to the NRC Interim Staff Evaluation open item and confirmatory items. Open item and confirmatory items identified as completed in Reference 3 require no further update:

Confirmatory Item 3.1.1.1.A:

The licensee's response to the NRC audit process noted that both FLEX equipment storage locations may be subject to seismically-induced small landslide debris flows, which will be accommodated into the design of the facilities. Confirm incorporation of the capability to withstand seismically-induced small landslide debris flow.

Response: This item is complete. The Primary BDB Storage Location has been evaluated for seismically-induced small landslide debris flows, which shows there is no potential for these debris flows to affect the storage location. The Secondary BDB Storage Location has been relocated to an area west of the 500 kV Distribution Yard that is not subject to seismically-induced small landslide debris flows. Therefore, neither location is affected by seismically-induced small landslide debris flows.

Confirmatory Item 3.1.1.4.A (049-RAI-DCPP-006):

Off-Site Resources – Confirm RRC local staging area, evaluation of access routes, and method of transportation to the site.

Response: PG&E will confirm NSRC, formerly RRC, local staging area, evaluation of access routes, and method of transportation to the site in a future six-month update.

Confirmatory Item 3.2.1.A:

NEI 12-06, Section 3.2.1.5, on reactor coolant inventory loss, states sources of expected reactor coolant inventory loss includes "losses from letdown unless automatically isolated or until isolation is procedurally directed." Provide discussion and/or analysis regarding letdown losses.

Response: This item is complete. Letdown losses can be significant if not isolated, and for DCPD a loss of power to the charging pumps will cause automatic isolation of letdown. Upon a loss of AC power, safety-related Letdown Isolation Valves 8149A, B, and C fail closed and isolate the RCS, preventing letdown losses. Under the scope of NEI 12-06, additional single failures are not assumed and these valves will close after the initiating event. As an additional measure, Step 3 of EOP ECA-0.0, "Loss of all Vital AC Power," requires verification of letdown isolation by the operators almost immediately after initiation of the event which verified these valve closures.

Confirmatory Item 3.2.1.B:

RCS cooling and heat removal, and RCS inventory control – The licensee provided information regarding the analysis from WCAP-17601 applicable to DCPD in response

to NRC staff requests. The NRC staff is continuing to review this information to ensure the licensee sufficiently justifies the analysis being applied. Additional information may be needed to confirm appropriate use of the analysis.

Response: PG&E notes that the NRC Staff is continuing to review information regarding the analysis from WCAP-17601 applicable to DCPD in response to NRC Staff requests. PG&E will provide additional information, if required, in a future six-month status update.

Confirmatory Item 3.2.1.4.A:

The licensee used the Modular Accident Analysis Program (MAAP) code in performing its ELAP analyses. Aspects of the MAAP code analyses, such as boundary conditions, nodalization, and the selection of code options for modeling key physical phenomena, were not discussed in the Integrated Plan. Provide an understanding of the above issues to assess the technical adequacy of the code and determining the code's range of applicability.

Response: PG&E will provide information on the Modular Accident Analysis Program (MAAP) code used in performing the ELAP analysis to show the technical adequacy of the code and the code's range of applicability in a future six-month status update.

Confirmatory Item 3.2.1.6.A:

On pages 70 through 73 in the Integrated Plan, the licensee listed elapsed times and time constraints in different columns in Attachment 1A (sequence of events timeline). The review determined that the times listed in the elapsed time column and the time constraint column often are the same and provide no margin between the elapsed time and the time constraint time. Provide clarification on how early a step must be begun to meet the time constraint, when the licensee actually expects to begin performing the step, and information on what margin exists for these critical actions, and whether the time can be reasonably met.

Response: PG&E will provide clarification on how early a step must be begun to meet the time constraint, when it is expected to begin performing the step, information on what margin exists for these critical actions, and whether the time can be reasonably met in a future six-month status update.

Confirmatory Item 3.2.4.4.A:

Communications – Confirm that upgrades to the site’s communications systems have been completed.

Response: PG&E will confirm the completion of the upgrades to the site’s communications systems in a future six-month status update.

Confirmatory Item 3.2.4.8.A:

Confirm protective features of the Class 1E circuit breaker will be evaluated by engineering calculation to adequately protect the bus, and that all load breakers be disabled (dc switch open) prior to energizing the 4 kV bus with FLEX DG.

Response: This item is complete. A technical evaluation was performed in the electrical and Instrument and Controls (I&C) evaluation section on relay settings in the FLEX design change packages for the Safety Functions Support strategy (Design Change Packages #1000024988 and #1000024989). This evaluation specifically includes evaluation addressing the protective features associated with the 4160 V switchgear bus. This evaluation discusses each relay and the operational impact when the FLEX 4160 V equipment is feeding either Buses G or H. The normal protective setpoints associated with the 4160 V system are not altered by the FLEX strategy designs. As a result, no calculation was required to be performed.

These design changes also specify to open all of the direct current (DC) knife switches for each 4160 V breaker not in the scope of FLEX operations prior to repowering any 4160 V bus. FLEX support guidelines procedures will control this configuration and ensure that DC knife switches associated with the non-FLEX operation loads are opened. Leaving and DC knife switches associated with the FLEX operations closed will ensure that the protective relays will remain aligned and available prior to energizing the bus.

Confirmatory Item 3.2.4.10.A:

The licensee has not informed the NRC of their plan to abide by the generic resolution related to extended battery duty cycles, or their plans to address potential plant-specific issues associated with implementing this resolution.

Response: This item is complete. PG&E has confirmed that the battery duty cycle was calculated in accordance with the generic resolution provided in NEI White Paper, “EA-12-049 Mitigating Strategies Resolution of Extended Battery Duty Cycles Generic Concern,” dated August 27, 2013.

Confirmatory Item 3.4.A:

NEI 12-06, Section 12.2 lists minimum capabilities for offsite resources for which each Licensee should establish the availability. Discuss implementation of Guidelines 2 through 10 in NEI 12-06, Section 12.2.

Response: PG&E will discuss the implementation of Guidelines 2 through 10 in NEI 12-06, Section 12.2, in a future six-month status update.

9. Planned Communications Equipment Status Updates

PG&E submitted its response to a RAI regarding the Recommendation 9.3 Communications Assessment in PG&E Letter DCL-12-110, "Pacific Gas and Electric Company's Response to Recommendation 9.3 Communications Requests 1 and 3 and the Evaluation of Existing Communications Systems Power Supplies," dated October 29, 2012 (Reference 5). In its response, PG&E committed to provide a status update of the planned communications equipment in the six-month status reports prepared pursuant to NRC Order EA-12-049, Section IV.C.2. The following provides a status update of the planned communication equipment.

Communications Item 1:

As discussed in Reference 5, PG&E committed to procure additional hand held satellite phones, batteries, and chargers that will be provided with portable generator back-up power by December 31, 2013.

In Reference 6, PG&E concluded that a total of 9 satellite phones, 27 satellite phone batteries, and 5 multi-unit satellite phone chargers are required to ensure that the control room (CR), technical support center (TSC), and emergency operations facility have a dedicated line to perform State and County notifications. In addition, PG&E concluded that 8 satellite phones, 18 satellite phone batteries, and 5 multi-unit satellite phone chargers need to be procured.

Status:

- (1) PG&E has procured an additional eight satellite phones and placed into service nine satellite phones. The procurement of the additional satellite phones was reported as complete in Reference 10.
- (2) PG&E has procured 18 satellite phone batteries. The procurement of the satellite phone batteries was reported as complete in Reference 10.
- (3) PG&E has procured five multi-unit satellite phone chargers. The procurement of the satellite phone chargers was reported as complete in Reference 10.

- (4) Refer to Communications Item 5 for a status of the portable diesel generators. Until the portable diesel generators are received and placed in service, the hand held satellite phone chargers will be provided with back-up power using the communications trailer diesel generator. A procedure for charging the satellite phones using the communications trailer was reported as completed in Reference 10.

Clarification: As discussed in Reference 6, the portable hand held satellite phones have a talk time of 3.1 hours and a recharge time of 4 hours.

However, the additional batteries procured for the portable hand held satellite phones have talk time of 6 hours. The recharge time for the portable hand held satellite phones is 6 hours.

Communications Item 2:

As discussed in Reference 5, PG&E committed to install a fixed satellite phone with an external antenna in the Sheriff Watch Commander's office by October 27, 2015. As discussed in Reference 6, back-up power for the Sheriff Watch Commander's fixed satellite phone will be provided by an existing diesel generator with a 1000-gallon tank that is capable of providing 120 hours of power.

Status: The installation of the Sheriff Watch Commander's fixed satellite phone and antenna is on schedule.

Communications Item 3:

As discussed in Reference 6, PG&E committed to procure additional single and dual band radio batteries and chargers that will be provided with portable generator back-up power by October 27, 2015.

Based on a review of the radio specifications in Reference 6, PG&E concluded that a total of 160 dual band radio batteries, 150 single band radio batteries, 14 6-unit and 20 single-unit dual band chargers, and 13 6-unit and 20 single-unit single band chargers are required to maintain communications within a 24-hour period. Reference 5 also stated that 80 dual band radio batteries and 75 single band radio batteries need to be procured.

Status:

- (1) The procurement of the additional single- and dual-band radio batteries is on schedule to be completed by October 27, 2015.

- (2) PG&E has 14 6-unit and 20 single-unit dual band chargers, and 13 6-unit and 20 single-unit single band chargers. This item was reported as complete in Reference 10.
- (3) Refer to Communications Item 5 for a status of the portable diesel generators.

Communications Item 4:

As discussed in Reference 3, a radio console will not be installed in the operational support center. PG&E will store radios, batteries, and chargers in a FLEX storage facility to support continued radio communications. This equipment will be stored in a FLEX storage facility by October 27, 2015.

Status: The radios, batteries, and chargers will be relocated to a FLEX storage facility as part of Phase 2, which is scheduled for October 27, 2015. Refer to Communications Item 3 for a status of the procurement of the additional radios, batteries, and chargers.

Communications Item 5:

As discussed in Reference 5, PG&E committed to procure portable generators and equipment to ensure that adequate power will exist to support extended operations. This equipment will be placed in service with approved procedures as part of Phase 2, which is scheduled for October 27, 2015.

Status: The portable generator enhancements are on schedule.

Communications Item 6:

As discussed in Reference 5, PG&E committed to relocate the SmartMsg and Zetron pager systems from their current location to an existing structure that is seismically robust. This will be completed by October 27, 2015.

As discussed in Reference 6, the paging system battery will be battery backed, with capability to be provided from a portable diesel generator, to ensure that adequate power will exist to support extended operations beyond 24 hours. Refer to Communications Item 5 for a status of the portable generators.

Status: The relocation of the SmartMsg and Zetron pager systems is on schedule.

Communications Item 7:

As discussed in Reference 6, PG&E committed to establish credited manual actions and their procedures in accordance with NEI 12-01 and NRC Order EA-12-049. Credited manual actions and procedures for the Phase 1 communications are scheduled to be completed by December 31, 2013. Credited manual actions and procedures for the Phase 2 communications are currently scheduled to be completed by October 27, 2015.

Status: Credited manual actions and procedures for Phase 1 communication were reported as complete in Reference 10.

Completion of Phase 2 credited manual actions and their procedures are on schedule.

Communications Item 8:

As discussed in Reference 6, PG&E committed to establish maintenance procedures for the planned enhancements, including operability testing, in accordance with NEI 12-01 and NRC Order EA-12-049. Maintenance procedures for the Phase 1 communications are currently scheduled to be completed by December 31, 2013. Maintenance procedures for the Phase 2 communications are currently scheduled to be completed by October 27, 2015.

Status: Temporary maintenance procedures for the Phase 1 communications were reported as complete in Reference 10. A permanent procedure for maintenance of the Phase 1 communications will be completed with Phase 2 procedures. Completion of Phase 2 maintenance procedures are on schedule.

Communications Item 9:

As discussed in Reference 6, PG&E committed to establish periodic inventory checks for the planned enhancements in accordance with NEI 12-01 and NRC Order EA-12-049. Periodic inventory checks for the Phase 1 communications are currently scheduled to be completed by December 31, 2013. Periodic inventory checks for the Phase 2 communications are currently scheduled to be completed by October 27, 2015.

Status: A temporary procedure for inventory checks of the Phase 1 communications equipment was reported as completed in Reference 10. A permanent procedure for inventory checks of the Phase 1 communications equipment will be completed with Phase 2 procedures. Completion of Phase 2 inventory procedures is on schedule.

Communications Item 10:

As discussed in Reference 6, PG&E committed to develop training plans for response personnel in plant groups such as the emergency response organization, fire, security, emergency planning, operations, engineering, and maintenance. The training plans will be developed in accordance with DCPD procedures using the systematic approach to training and will be implemented to ensure that the required DCPD staff is trained in accordance with NEI 12-01 and NRC Order EA-12-049. Training for applicable plant staff on the Phase 1 communications equipment was scheduled to be completed by December 31, 2013. Training for plant staff on the Phase 2 communications equipment is currently scheduled to be completed by October 27, 2015.

Status: Training plans and training for applicable plant staff on the Phase 1 communications equipment were reported complete in Reference 10. Phase 2 plant staff training is on schedule.

Communications Item 11:

As discussed in Reference 5, PG&E committed to relocate onsite Field Monitoring Team (FMT) satellite phones to the onsite FMT vehicle. Currently, the onsite FMT satellite phones are not stored in a structure that is considered to be seismically robust in accordance with NEI 12-01. This commitment will be implemented as part of Phase 2, which is scheduled for October 27, 2015.

Status: PG&E will relocate the onsite FMT satellite phones to an onsite FLEX storage facility. The FLEX storage facility will be seismically robust in accordance with NEI 12-01 and NEI 12-06. The FMT satellite phone relocation is on schedule.

Communications Item 12:

As discussed in Reference 6, PG&E committed to provide power from an uninterrupted power supply with 6 hours of back-up power to the CR and TSC fixed satellite phones by October 27, 2015.

Status: PG&E will provide power from an uninterrupted power supply with 24 hours of back-up power to the CR and TSC fixed satellite phones to ensure that the CR and TSC fixed satellite phones will be functional for a 24-hour duration. The uninterrupted power supply improvements are on schedule.

10. Potential Draft Safety Evaluation Impacts

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

11. References

The following references support the updates to the OIP described in this enclosure:

- (1) PG&E Letter DCL-13-007, "Pacific Gas and Electric Company's 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 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) PG&E Letter DCL-14-076, "Pacific Gas and Electric Company's Third 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," dated August 21, 2014
- (4) PG&E Letter DCL-13-081, "Pacific Gas and Electric Company's 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," dated August 22, 2013
- (5) PG&E Letter DCL-12-110, "Pacific Gas and Electric Company's Response to Recommendation 9.3 Communication Requests 1 and 3 and the Evaluation of Existing Communications Systems Power Supplies," dated October 29, 2012
- (6) PG&E Letter DCL-13-012, "30-Day Response to Request for Additional Information Regarding the Recommendation 9.3 Communications Assessment," dated February 21, 2013
- (7) PG&E Letter DCL-12-048, "60-Day Response to 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
- (8) NRC Interim Staff Guidance, "Diablo Canyon Power Plant, Unit Nos. 1 and 2 – Interim Staff Evaluation Relating to Overall Integrated Plan in Response to Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF0958 and MF0959)," dated February 3, 2014

- (9) 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
- (10) PG&E Letter DCL-14-014, "Pacific Gas and Electric Company's Second 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 26, 2014

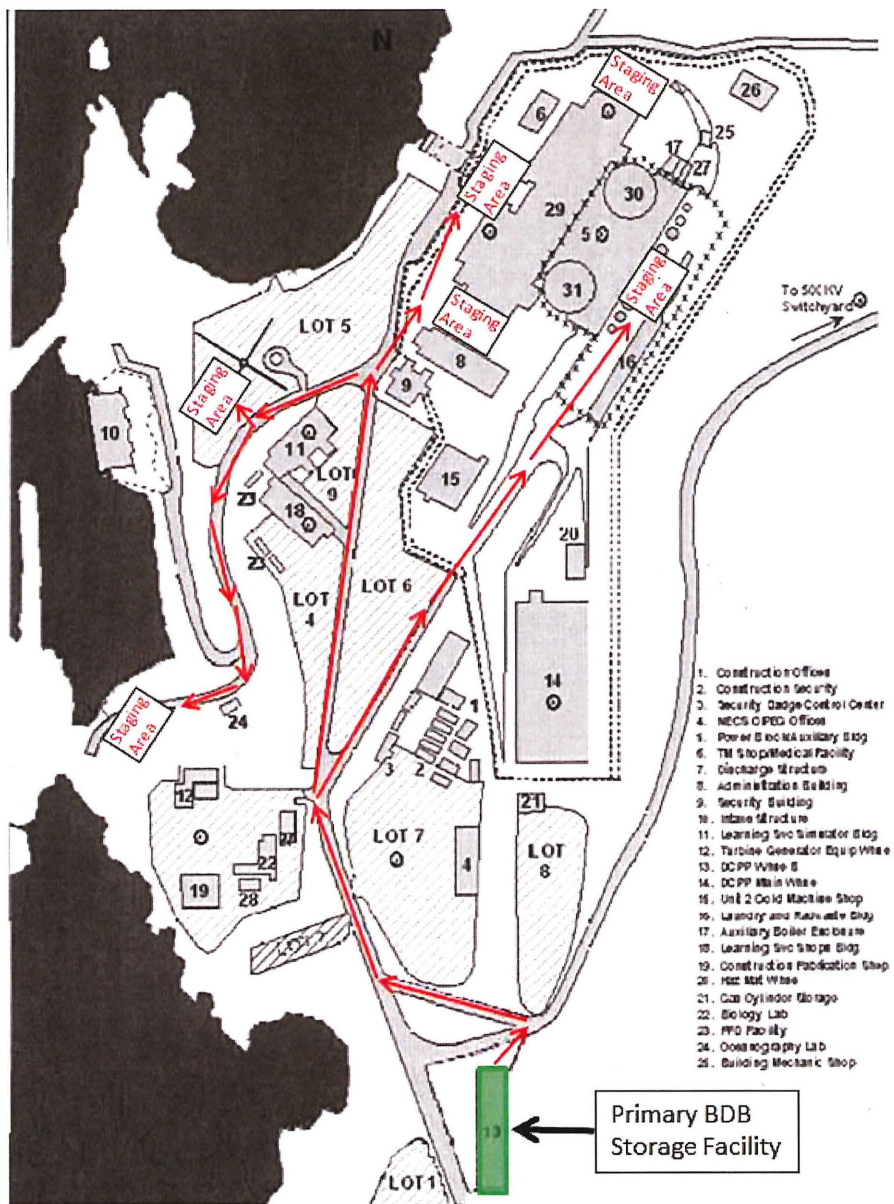
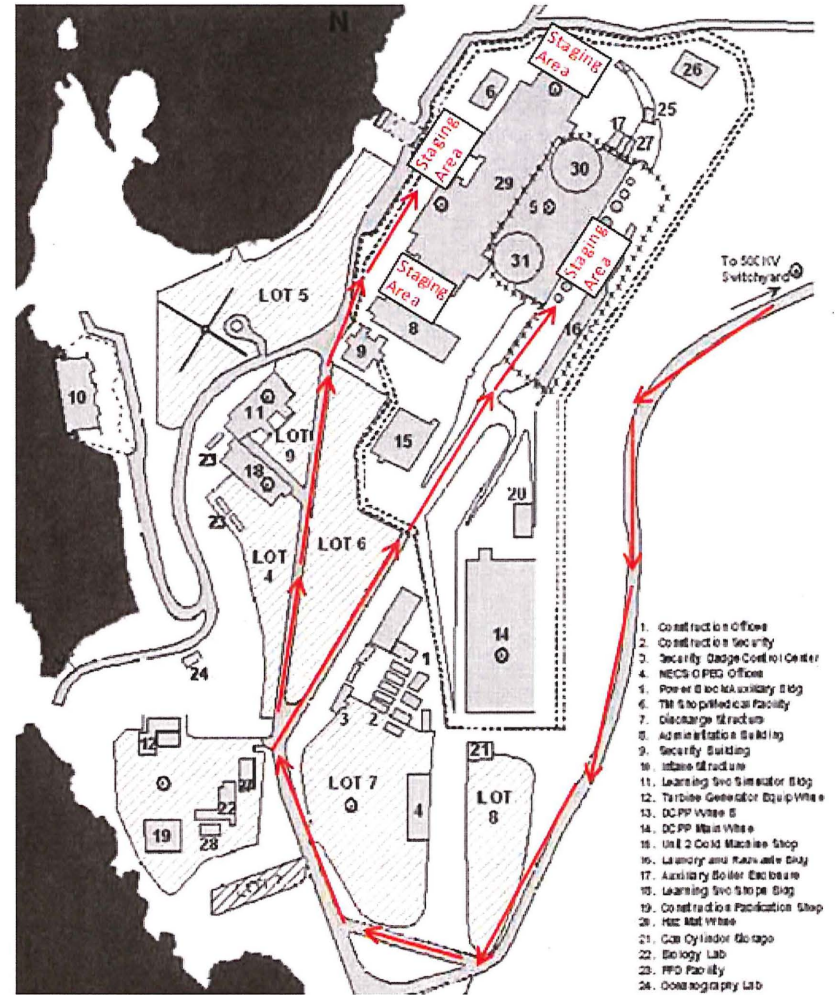
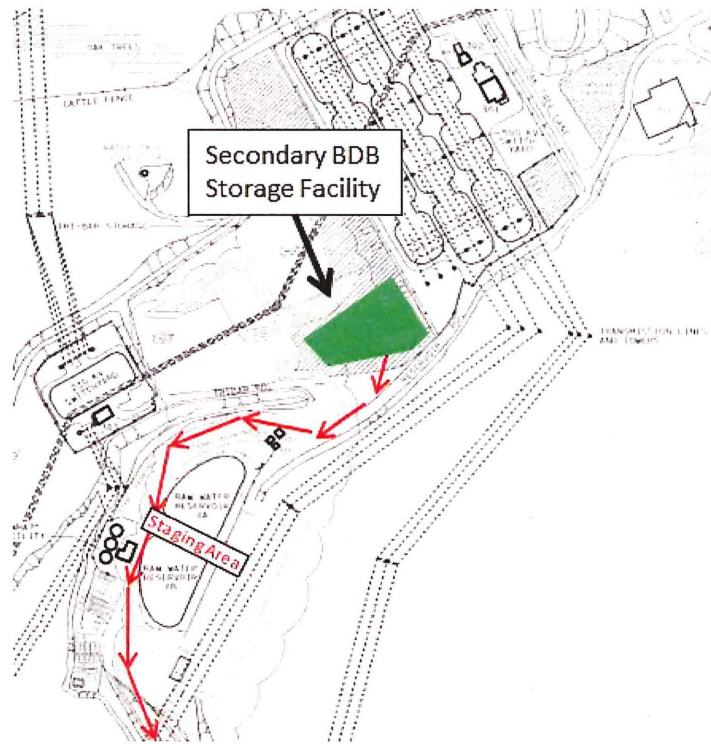


Figure 1
 Staging Routes
 Primary BDB Storage Facility



1. Construction Offices
2. Construction Security
3. Security Badge Control Center
4. NECS O PEG Offices
5. Power & Electrical Auxiliary Bldg
6. TM & Medical Facility
7. Discharge Structure
8. Administration Building
9. Security Building
10. Intake Structure
11. Learning & Simulator Bldg
12. Turbine Generator Equip Warehouse
13. DC PP Warehouse
14. DC PP Warehouse
15. Unit 2 Cold Machine Shop
16. Laundry and Reusable Only
17. Auxiliary Boiler Enclosure
18. Learning & Sim Bldg
19. Construction Fabrication Shop
20. Hot Mill Warehouse
21. Gas Cylinder Storage
22. Biology Lab
23. PFD Facility
24. Geology Lab

Figure 2
 Staging Routes
 Secondary BDB Storage Facility

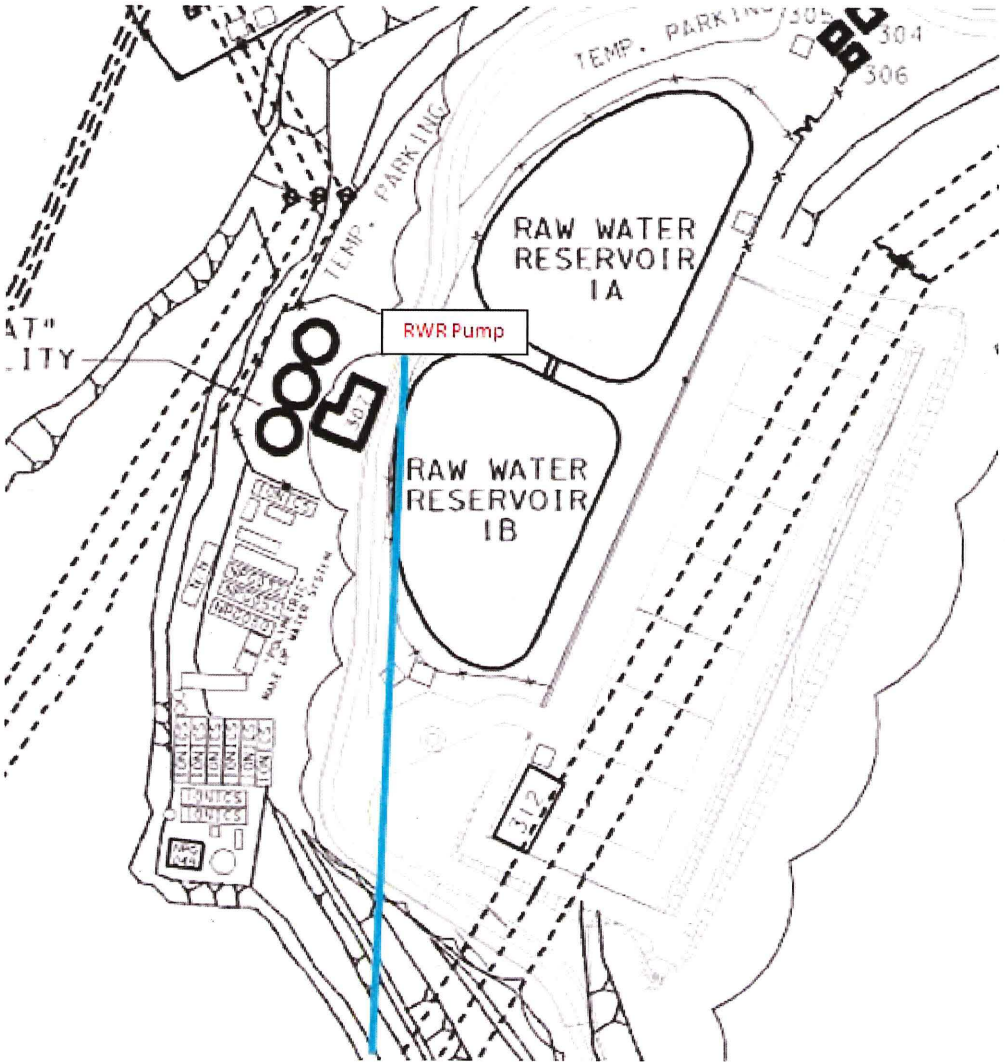
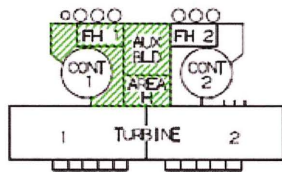
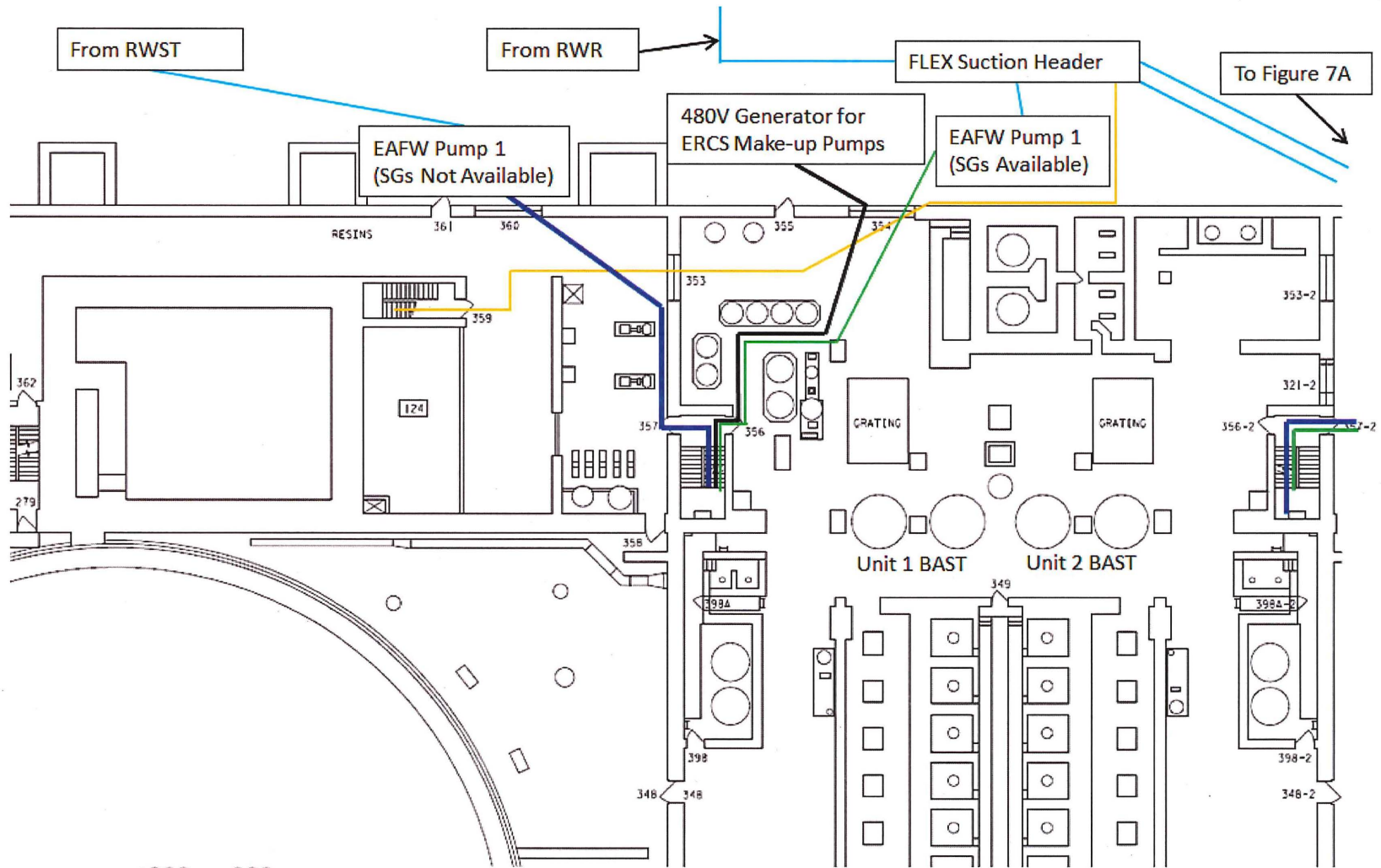


Figure 5A
Alt Sources – RWR
Unit 1 & 2



- 480V Generator Cables
- AFW SGs Available
- SFP Flexible Hose
- AFW SGs Not Available

Figure 6A
 All Strategies – Primary
 Unit 1 and 2
 Elevation 115'

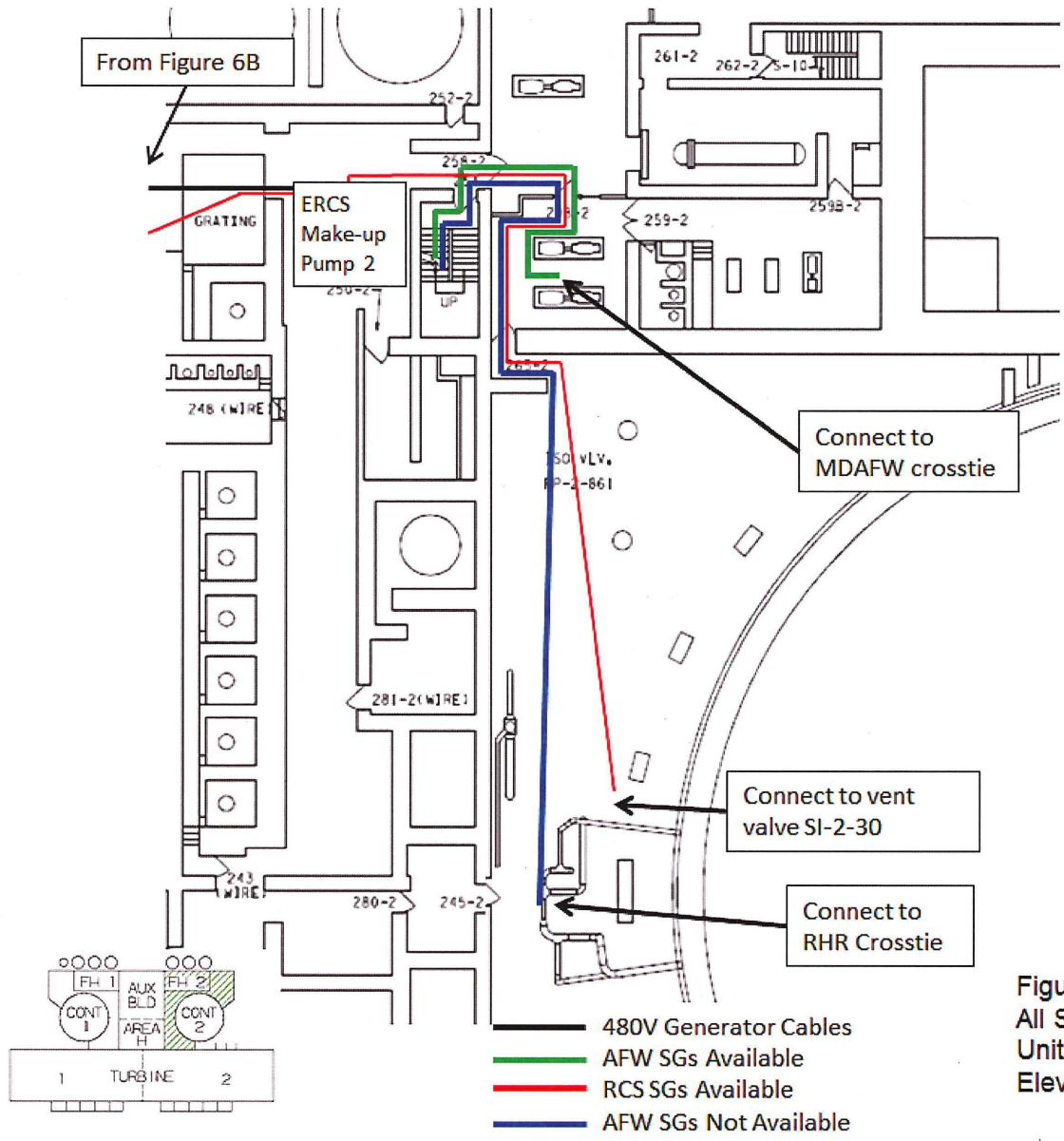


Figure 7B
 All Strategies – Primary
 Unit 2
 Elevation 100'

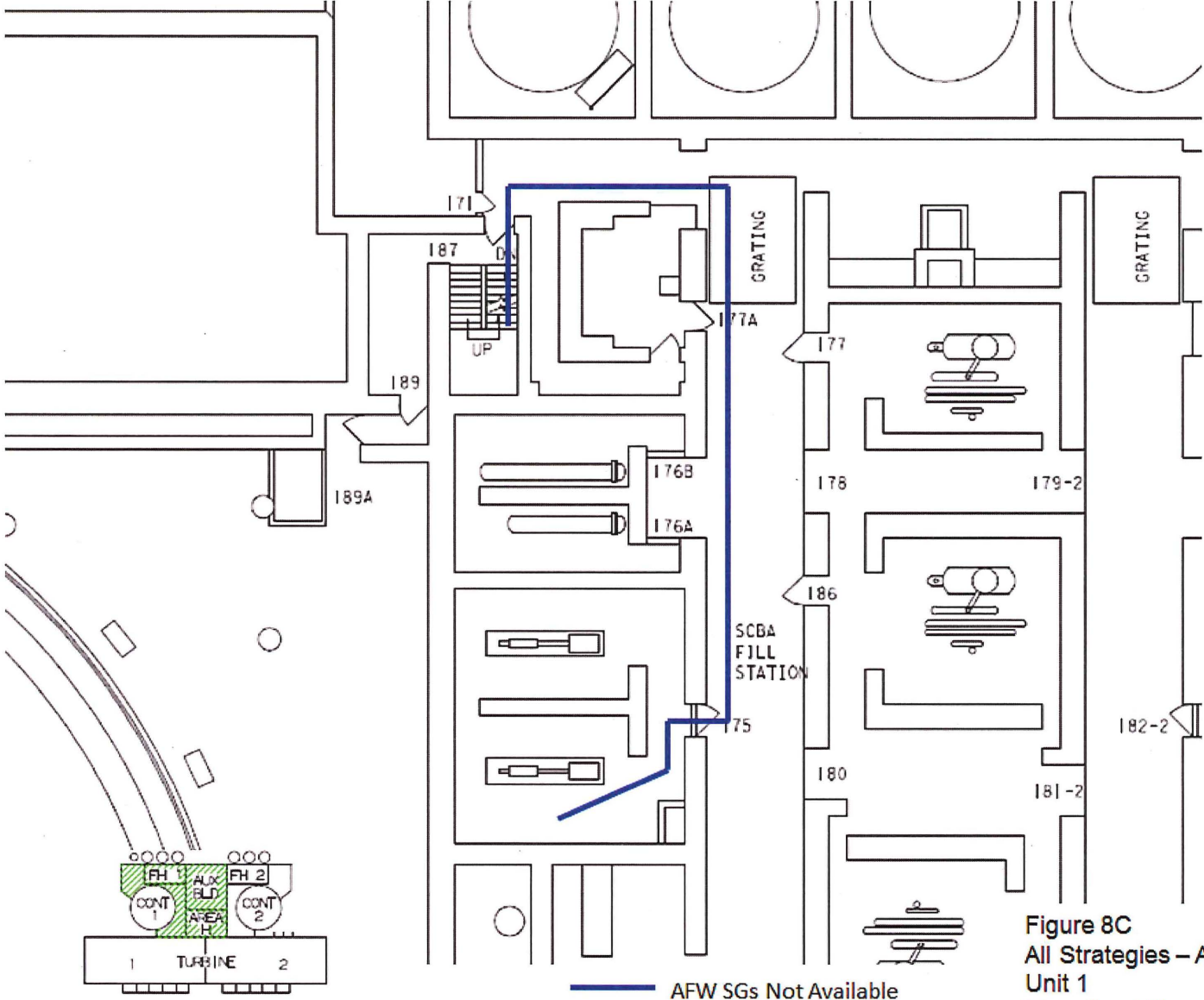
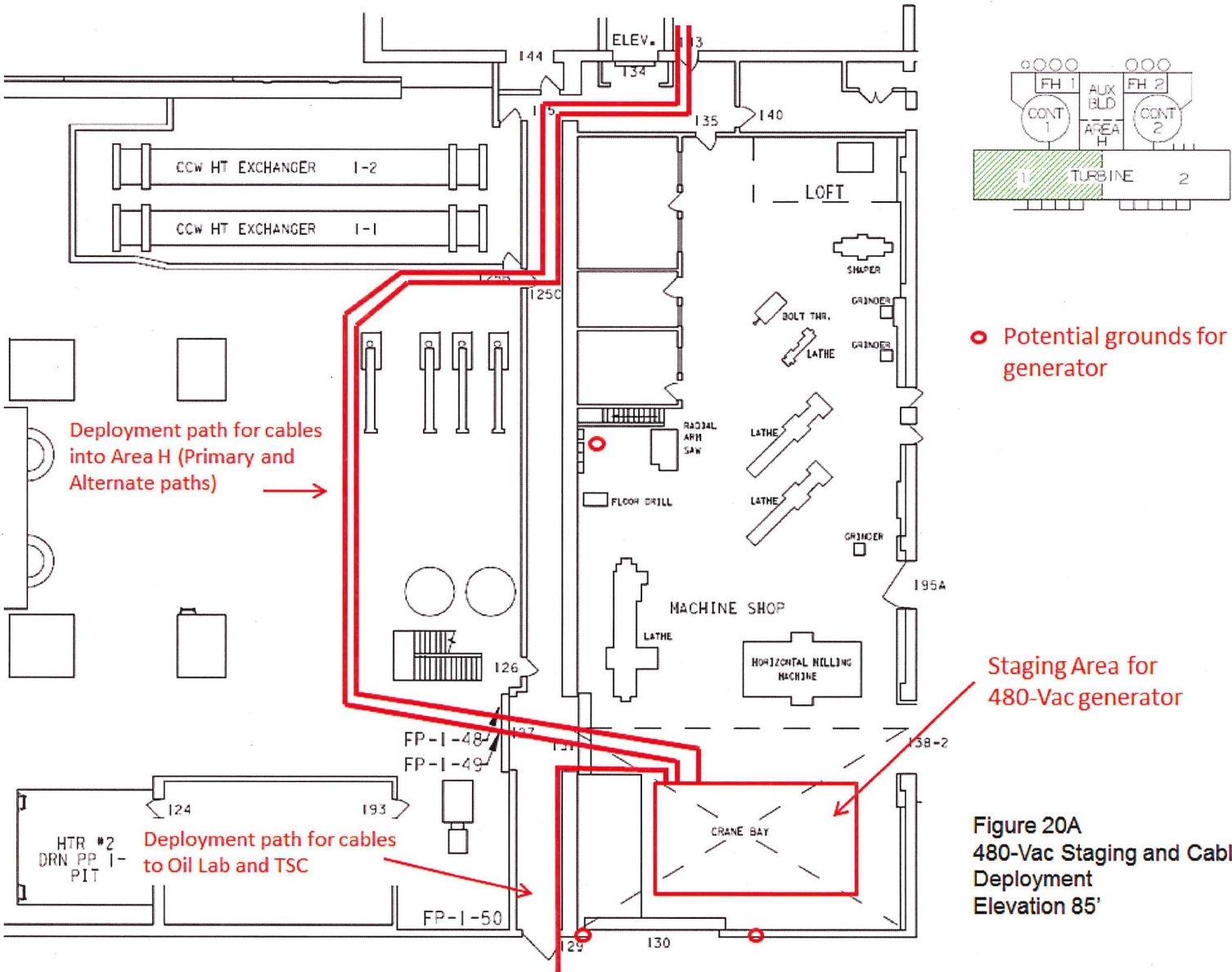
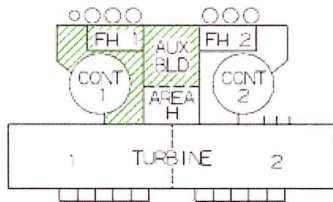
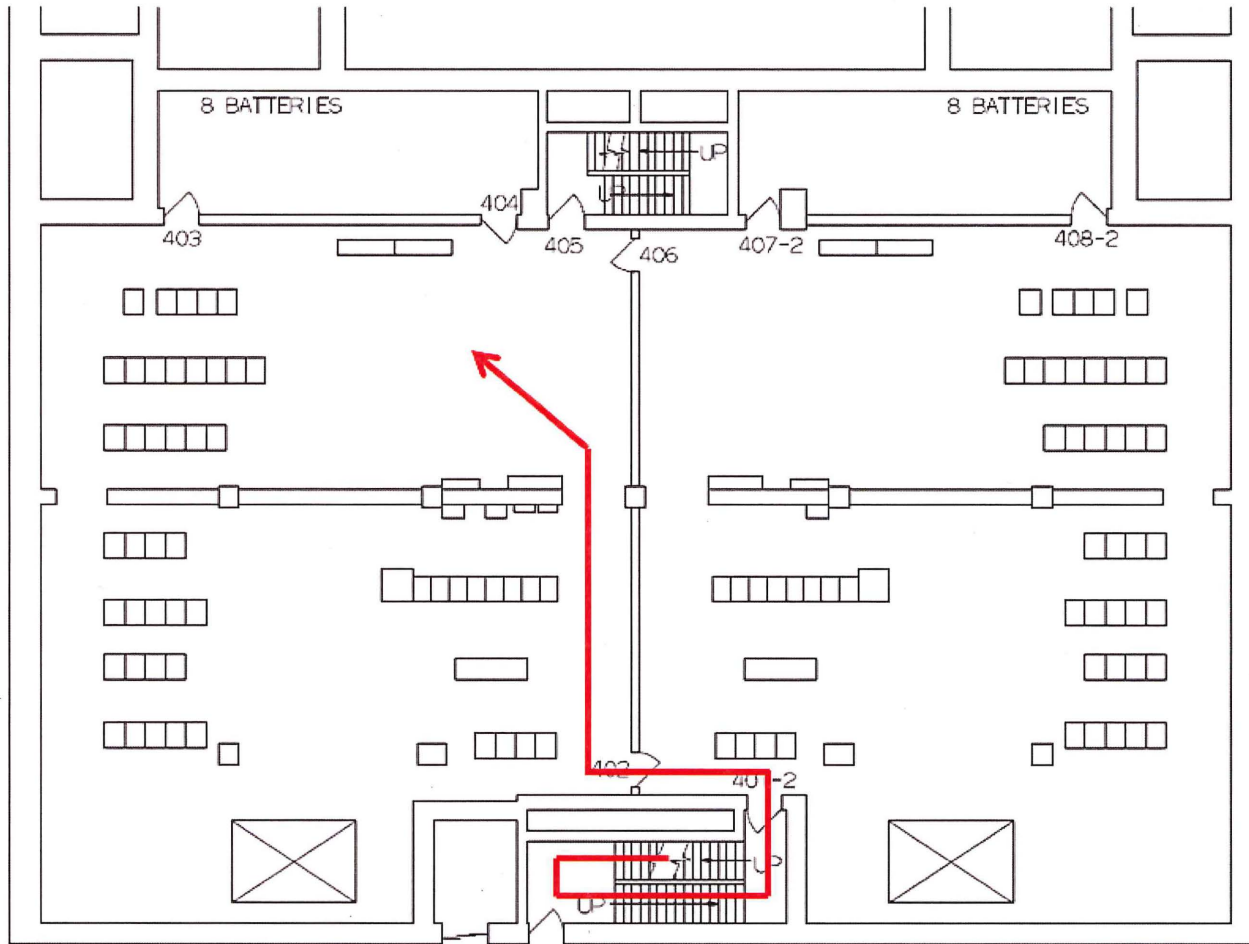


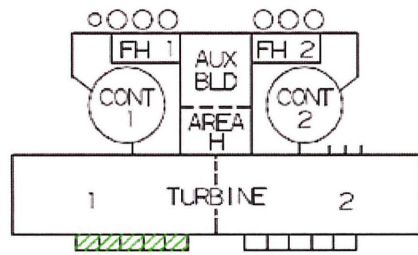
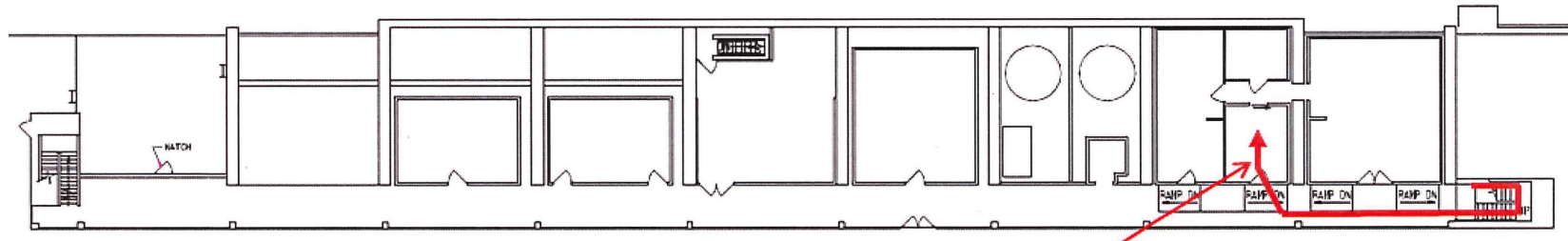
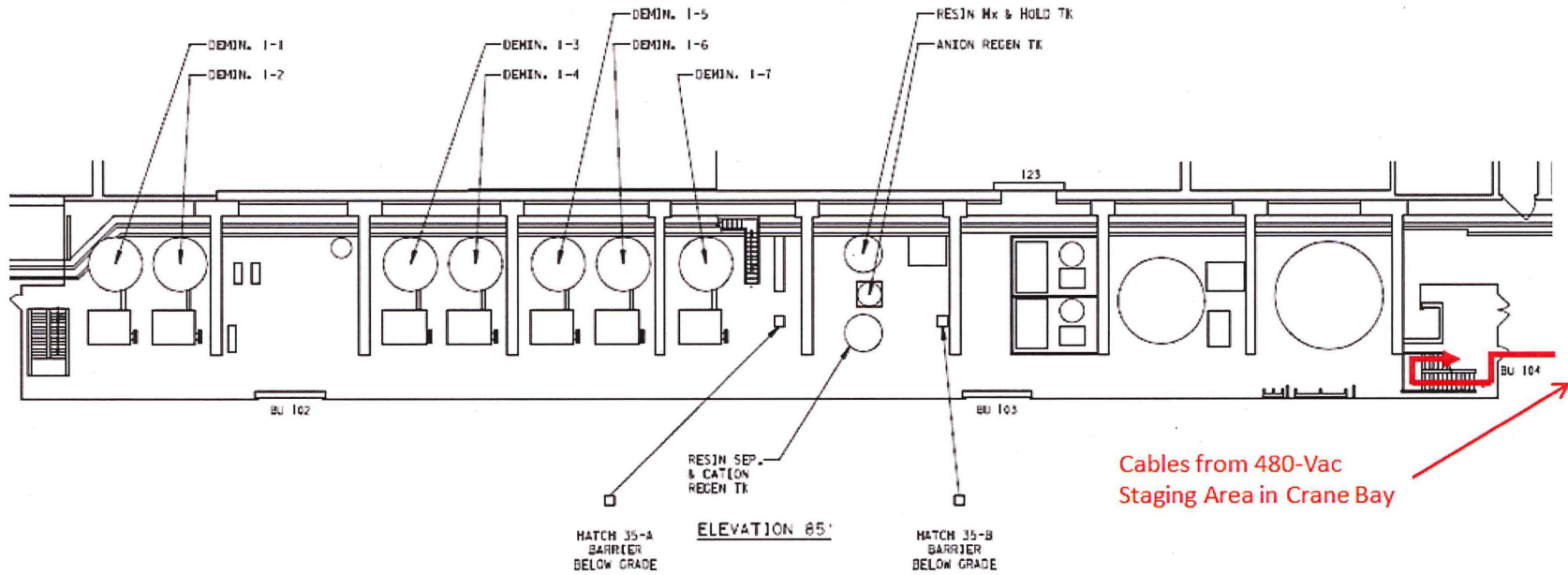
Figure 8C
All Strategies – Alternate
Unit 1
Elevation 85'





128' Area H – Cable connection to TCOM system batteries

Figure 20E
480-Vac Cable Routing
Elevation 128'



Connection for Oil Lab

ELEVATION 104'

Figure 20F
480-Vac Cable Routing
Elevation 104', Unit 1

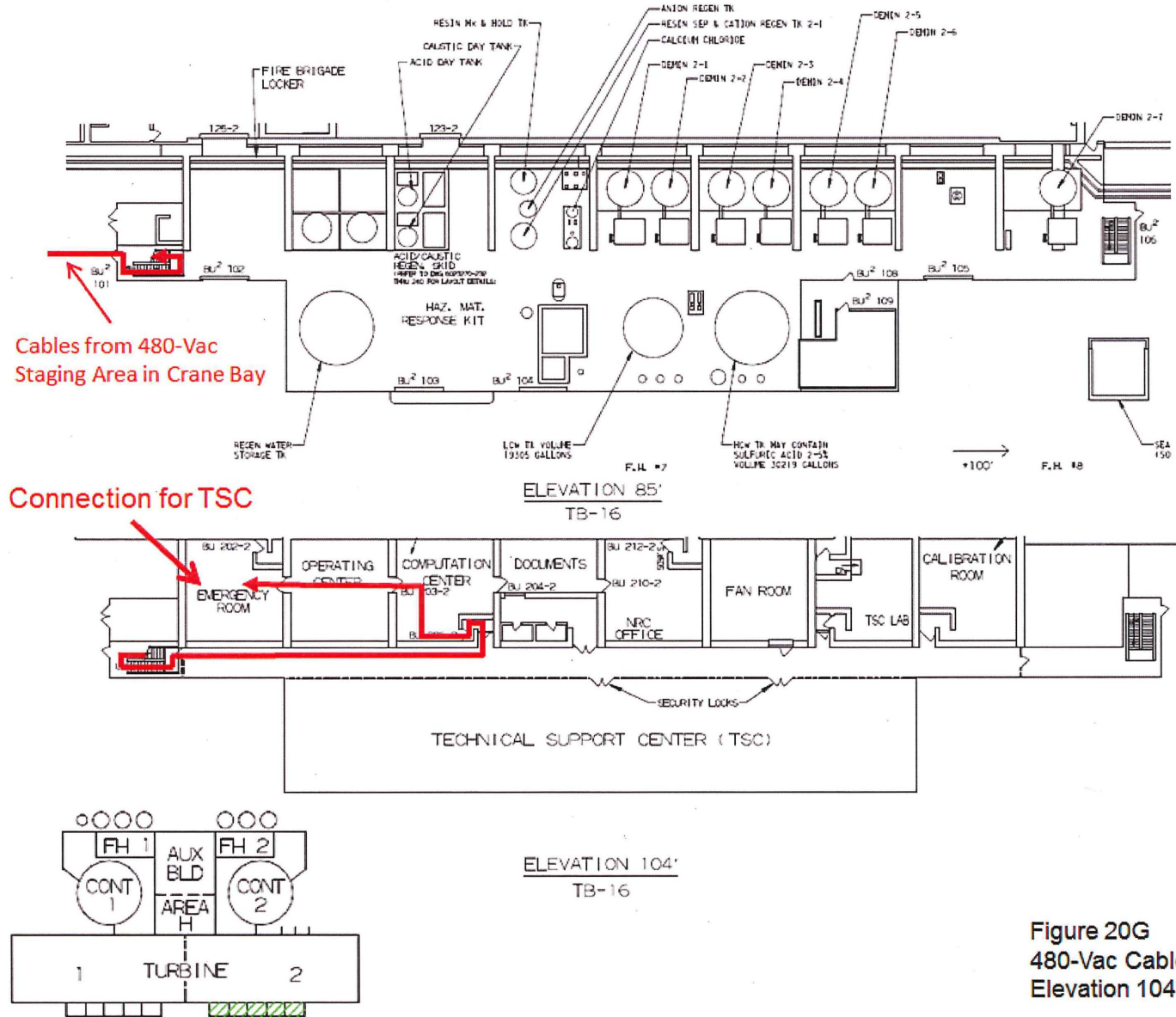


Figure 20G
 480-Vac Cable Routing
 Elevation 104', Unit 2