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PG&E Letter DCL-19-039

U.S. Nuclear Regulatory Commission
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Diablo Canyon Units 1 and 2
Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Response to NRC Request for Additional Information Regarding "License Amendment Request 18-01, Request to Revise Emergency Plan Response Organization Staffing and Augmentation"

References:
1. PG&E Letter DCL-18-064, "License Amendment Request 18-01, Request to Revise Emergency Plan Response Organization Staffing and Augmentation," dated September 12, 2018

2. E-mail from NRC Senior Project Manager Balwant K. Singal, "Request for Additional Information - License Amendment Request (LAR) to Revise Emergency Plan Response Organization Staffing and Augmentation (EPID L-2018-LLA-0248)," dated March 21, 2019

Dear Commissioners and Staff:

In Reference 1, Pacific Gas and Electric Company (PG&E) submitted a license amendment request to revise the Emergency Plan for Diablo Canyon Power Plant to extend staff augmentation times for Emergency Response Organization functions. In Reference 2, the NRC Staff provided a request for additional information (RAI) via an e-mail, dated March 21, 2019. The Enclosure to this letter provides PG&E responses to the RAI.

This letter includes new regulatory commitments (as defined by NEI 99-04), which are identified in Attachment 2 of the Enclosure.

If you have any questions or require additional information, please contact Mr. Hossein Hamzehee at (805) 545-4720.

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

Executed on May 2, 2019.

Sincerely,

James M. Welsch
*Vice President, Nuclear Generation and Chief Nuclear Officer*

mjrm/4557/50993706
Enclosure
cc: Diablo Distribution
cc/enc: Scott A. Morris, NRC Region IV Administrator
Christopher W. Newport, NRC Senior Resident Inspector
Gonzalo L. Perez, Branch Chief, California Department of Public Health
Balwant K. Singal, NRC Senior Project Manager

**PG&E Response to NRC Request for Additional Information Regarding "License Amendment Request 18-01, Request to Revise Emergency Plan Response Organization Staffing and Augmentation"**

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**RAI #1:**

*PG&E proposes to extend the augmentation timing of the Site Emergency Coordinator (SEC) at the Technical Support Center (TSC) and the Emergency Director (ED) at the Emergency Operations Facility (EOF) from 60-minute to 90 minutes responders. The justification provided is to have the Operations Advisor, who does not appear to be qualified as either a Shift Manager (SM) or an Emergency Director, report to the control room (CR) within 60 minutes from the declaration of an Alert or higher classification level, in lieu of the responding to the TSC. As such, the Operations Advisor does not appear to be relieving the SM of emergency plan functions.*

*Section 3.2.1.c of the Enclosure, "Evaluation of Proposed Change," of the application states, in part:*

*In the proposed change, the Operations Advisor, a 60-minute response position, reports to the CR to provide on-shift support for plant operational oversight…. This change provides for specific support of command and control activities associated with plant operation, allowing the SM to focus on the event classification. With the removal of ancillary duties related to plant operations, the SM is able to maintain responsibility for event classification and direction of emergency response activities for an additional 30 minutes without conflicts.*

*Section 3.2.4.c of the Enclosure, "Evaluation of Proposed Change," of the application states, in part:*

*Personnel filling the Operations Advisor position are current and/or former SRO [senior reactor operator] license holders who fill plant management roles….*

*The guidance provided in RIS 2016-10 states:*

*A licensee requesting a change in staff augmentation requirements that would have the lead manager unavailable to assume command and control within 60 minutes of the initial emergency declaration should show that the on-shift staff includes enough qualified supervision such that one supervisor will assume the emergency director role. The licensee should show that the on-shift supervisor performing the manager actions will not have any additional duties (e.g., each unit under the direction of a unit supervisor, a shift manager providing oversight of the plant response, and a designated emergency director responsible for emergency plan implementation).*

*In addition, the guidance in the revised Table B-1 provides for a 60-minute augmenting Emergency Coordinator position to provide augmentation (relief) for the on-shift Command and Control position at the declaration of an Alert or higher classification level. It further provides a 60-minute augmenting Emergency Director position at the declaration of a Site Area Emergency or higher classification level.*

*Please provide specific justification as to how relocating the Operations Advisor from the TSC to the CR adequately augments (relieves) the Shift Manager position from providing oversight of the plant response to allow for performance of Emergency Coordinator responsibilities for emergency plan implementation for the additional timing requested, consistent with the guidance in RIS 2016-10 and the revised Table B-1, which serve as an acceptable means of meeting planning standard 10 CFR 50.47(b)(2).*

*Additionally, please provide a justification that supports removing the Operations Advisor from the TSC. This justification should include a discussion on who will assume the tasks are currently being performed by the Operations Advisor in the TSC.*

**PG&E Response RAI-1a:**

Performance of initial on-shift activities at Diablo Canyon Power Plant (DCPP) by the four (4) CR senior reactor operators (SROs) are assigned such that;

- The Shift Manager (SM/SRO) assumes the emergency director role, which includes:
  - event classification
  - oversight of plant response
- Two SRO's are provided in the CR and are responsible for oversight and coordination of plant response for each unit and supporting the SM as needed
- The remaining SRO is responsible for Shift Technical Advisor (STA)/Dose Assessment activities

The proposed change provides for response within 60 minutes by the TSC Operations Advisor to the CR to relieve the SM of the responsibility for oversight

of plant response. The Operations Advisor prequalification, as documented in OM10.ID4, "Emergency Response Organization Management" identifies the Shift Foreman/SRO license qualification as a desired prerequisite. PG&E commits to revising this procedure to make this pre-requisite mandatory for the Operations Advisor position. The SRO license qualification does not include requirements for standing watch (i.e., active status). The Operations Advisor would then relocate to the TSC upon facility activation and perform that role.

Currently, the Operations Advisor responsibilities in the TSC include maintaining awareness of operator actions in the CR and in the plant, relaying that information to the TSC Site Emergency Coordinator (SEC) as noted in site procedures. Individuals now filling the Operations Advisor position hold current or previous Shift Foreman/SRO qualification. As stated above, an SRO license qualification will be required for the Operations Advisor if the proposed Plan is adopted.

Shift Foreman/SRO qualified individuals are trained in performance of directing activities of licensed operators, providing direct supervision of the plant operators and for assuming command and control responsibility for the CR. Shift Foreman/SRO training includes demonstrations of oversight of plant briefings, monitoring plant operations, determining effectiveness of crew actions, and the ability to maintain overall plant awareness. Additionally, assuming the responsibilities of SM is one of the items that is covered in training of Shift Foreman/SROs. The proposed change leverages this training for performance of oversight of plant response in the CR for the SM within 60 minutes by relieving the SM of the responsibility for oversight of plant response burden and allowing the SM to focus on event classification.

The proposed change is aligned with the guidance provided in Regulatory Issue Summary (RIS) 2016-10 in that responsibility for the Emergency Preparedness (EP) function of classification is separated from the command and control function of oversight of the plant response, and the addition of a Shift Foreman/SRO within 60 minutes provides supervision such that the SM is able to maintain the emergency director role. This process provides for minimization of turnover of E-Plan classification between the CR and TSC and provides the Operations Advisor with detailed knowledge of plant event and response, which is directly applied when this position transitions to the TSC upon staffing of that facility.

**PG&E Response RAI-1b:**

The proposed change maintains the Operations Advisor as a position in the TSC.

The purpose behind maintaining the 60-minute response time for the Operations Advisor is to ensure that resources are made available to relieve CR event response activities in the same timeframe as required in the current PG&E E-Plan. The proposed change provides for initial response by the Operations

Advisor to the CR as noted in RAI-1a, and provides for transition of this position to the TSC upon staffing of that facility.

Based on this RAI, PG&E has revised Section 5.6.11 of the E-Plan to provide additional clarification regarding Operations Advisor responsibilities and reporting locations.

A revision to the affected pages of the proposed DCPP E-Plan are included in Attachment 1 (highlighted markup).

**RAI #2:**

*The proposed PG&E Table 5-1, "DCPP on-Shift and Augmented ERO Minimum Staffing," removes one control room operator from the current DCPP emergency plan. Although this is a Plant Operations and Assessment of Operational Aspects position, no specific discussion or justification was provided in Section 3.2.1, "Plant Operations and Assessment of Operational Aspects," of the functional analysis that justifies the removal of one control room operator.*

**PG&E Response RAI-2:**

The proposed PG&E E-Plan maintains the same number of CR operators on-shift as the current PG&E E-Plan. The current PG&E E-Plan Table 5-1A, "DCPP On-Shift ERO Staffing," identifies five (5) CR operators under the functional area of Plant Operations and Assessment of Operational Aspects.

The proposed change to Table 5-1, "DCPP On-Shift and Augmented ERO Minimum Staffing," in Section 5 of the E-plan maintains four (4) CR operators under this functional area and designates the 5$^{th}$ CR operator to the Notification and Communication functional area for the performance of Federal notification.

The purpose of this change was to more clearly identify operator responsibilities performing E-Plan functions, while ensuring continued performance of the function for the additional 30 minutes until augmented resources are available in the TSC and/or EOF.

**RAI #3:**

*PG&E currently has the Shift Foreman/Shift Technical Advisor (STA) perform dose assessment in "Quick" mode, which uses a set of assumptions to perform dose assessment. The proposed change would extend the time of using the "Quick" mode of dose assessment from 60 minutes to 90 minutes. However, no justification was provided to support this change.*

*Please provide further justification that supports proposed extension of time that the "Quick" mode of dose assessment will be used. This justification should address both the accuracy of the dose assessment and the level of effort required*

*to perform the "Quick" dose assessment to ensure the timely performance of offsite dose assessment consistent with the guidance in RIS 2016-10 and the revised 10 CFR 50.47(b)(2).*

**PG&E Response RAI-3:**

Dose Assessment, whether performed on-shift or subsequently when the Unified Dose Assessment Center (UDAC) is activated at the EOF, uses the Meteorological Information and Dose Assessment System (MIDAS) software as the basis for dose assessment.

Currently, the CR has the capability, procedural support and training to perform dose assessment using automatic or manual data entry options for a monitored release or an Event Tree mode providing dose assessments by accident types. The UDAC has additional procedural guidance addressing a wider range of accident types and back calculation using Field Team or PIC data to generate dose projections for Emergency Action Level (EAL) or Protective Action Recommendation (PAR) determination.

Following the approval of the submittal [Reference 1], the procedure addressing performance of CR dose assessment will be revised to reflect the UDAC capabilities applicable during early phases of an emergency. Specifically, MIDAS Menu's H, K-W, and E as discussed in the response to RAI-6b will be added to current CR dose assessment procedural guidance.

See RAI 6 response for a detailed discussion of the impact of on-shift dose assessment on CR personnel.

The proposed changes provide equivalent capabilities in timeliness, accuracy, and level of effort for performance of dose assessment on-shift and after augmentation for the response in the emergency phase.

**RAI #4:**

*PG&E currently has a Site Radiation Protection (RP) Coordinator performing the RP Supervisory Major Task in the Operations Support Center (OSC) within 60 minutes of the declaration of an Alert or higher classification level. The Site RP Coordinator response time was changed from 60 minutes to 90 minutes from the declaration of an Alert or higher classification level, and is included in the proposed Figure 4.3, "OSC Organization." However, it is not included on Table 5-1, "DCPP On-Shift and Augmented ERO Minimum Staffing," nor does the LAR did not provide a justification for the above changes.*

a. *Please explain what DCPP design features or on-shift capabilities, that are unique to DCPP, support extending the augmentation time for the Site RP*

*Coordinator from 60 minutes to 90 minutes from the declaration of an Alert or higher classification level. This explanation should be in addition to the improvements provided in the LAR that are typical to currently operating nuclear power plants, which were considered in the development of the revised Table B-1.*

b. *If DCPP does not have design features or on-shift capabilities to support extending augmentation time of the Site RP Coordinator from 60 minutes to 90 minutes following the declaration of an Alert or higher classification level, then justify excluding a required 60-minute response position from the proposed Table 5-1, "DCPP on-Shift and Augmented ERO Minimum Staffing."*

**PG&E Response RAI-4a:**

PG&E has re-evaluated the proposed changes with regard to the provision of supervisory oversight for RP Technicians and proposes to maintain the Site RP Coordinator position as a 60-minute responder for performance of this function.

The proposed Table 5-1 has been revised to reflect this change. The affected pages of the proposed DCPP E-Plan are included in Attachment 1 (highlighted markup).

**PG&E Response RAI-4b:**

As described in the response to RAI-4a, the proposed PG&E Plan has been revised to align with staff guidance. Therefore, the additional information requested in this RAI is not required.

**RAI #5:**

*PG&E proposes to extend the augmentation of the offsite survey teams from 60 minutes to 90 minutes following the declaration of an Alert or higher classification level based on the use of the DCPP real-time monitoring system combined with inputs from the onsite (out-of-plant) field monitoring team (FMT).*

a. *Please provide a justification that DCPP has an appropriate number of detectors positioned to provide a reasonable indication of radiological releases.*

b. *Please describe how these detectors could be used to assess the thyroid dose for event classification as approved in the DCPP emergency action scheme.*

c. *Please explain how the onsite (out-of-plant) FMT can assess an ongoing radiological release for offsite consequences with an equivalent capability as the offsite FMT.*

**PG&E Response RAI-5a:**

The off-site radiation monitoring system was described in the Safety Evaluation Report (SER) version of the DCPP E-Plan, Revision 3.03, and consisted of 7 Pressurized Ion Chamber detectors (PICs) at fixed locations and 6 portable PICs for a total of 13 PICs. This system was subsequently modified such that all thirteen PICs are provided at fixed locations. Ten of the PICs are located in each land-based sector beyond five miles and the other three are located on-site to provide support for the onsite (out-of-plant) team. Locations of PICs are based upon population centers, and to cover as many land based compass sectors as possible while accounting for prevailing wind direction, wind speed and the topography in the area around DCPP. The PICs provide real time data to the ERO in the event of an airborne release. As discussed below in RAI-5c, the plume will be monitored on-site by the on-site out of plant team with the data used to perform dose assessments as needed. The placement of the PICs ensure monitoring of a potential release is provided in the event the plume approaches the Emergency Planning Zone (EPZ) population centers prior to the availability of off-site FMTs.

**PG&E Response RAI-5b:**

As described in the Response to RAI-3, the MIDAS Dose Assessment Program contains an option to perform back-calculations using either PIC or Field Team sample data. When air sample data is not available the MIDAS software applies an Iodine factor to the reading from the PIC or handheld rate meter based on the accident type selected in the dose assessment run. MIDAS then generates results for total effective dose equivalent (TEDE) and committed dose equivalent (CDE) thyroid dose that support the determination of Emergency Action Levels and Protective Action Recommendations as needed. The response to RAI-3 provides a commitment to provide the CR with this model option as part of the transition to the revised Plan.

**PG&E Response RAI-5c:**

The Onsite (out of plant) survey team uses the same sampling and monitoring equipment as the offsite team and is trained to obtain the same exposure and environmental samples. Capabilities for gamma exposure rate by direct meter reading and iodine assessment via air sampling are equivalent to an offsite team. The proposed change provides for the dispatch of this two-person team within 60 minutes from an Alert or higher.

Pre-established sample points are located around the plant out to approximately 0.5 miles in the land-based sectors. Additional pre-established points are located to the northwest along the northern access road extending out to the site boundary at approximately 3.5 miles. To the southeast offsite sampling points are positioned along the main access route. The remainder of the land-based

sectors between the pre-established onsite sampling points and the offsite sampling points is rugged terrain accessible only by 4-wheel drive/all-terrain vehicle (ATV) access and as such are not utilized by DCPP FMTs due to safety considerations.

Based on plant design, releases from DCPP are treated as ground level releases. The 0.5 mile pre-established locations provide sufficient range from the site to ensure treatment as a ground level release.

Offsite consequences will be determined by inputting the environmental data (utilizing either PIC exposure rate, Field Team exposure rate, or field air sampling results) into the back-calculation mode of MIDAS.

**RAI #6:**

*Section 3.2.5, "Plant System Engineering, Repair and Corrective Actions Function" of the Enclosure of the application states:*

*The proposed change maintains responsibility for core damage assessment with the Work Control Shift Foreman and extends augmented response of the Reactor, Electrical, and Mechanical Engineers by 30 minutes. Technological improvement in the DCPP data display systems via the PPC [plant process computer] provides a wide range of plant parameters and associated alarms with detailed trending capability to support rapid and continuous monitoring of plant conditions.*

*The guidance provided in RIS 2016-10 provides the following:*

*To adequately justify an extension of these responders, the licensee should show that on-shift positions are capable of filling these roles during the 90-minute period after an emergency declaration. This will require a review of site procedures to identify the technical support tasks requiring electrical and mechanical expertise that must be performed within the first 90 minutes of an emergency. The licensee should then show that there are on-shift positions with the necessary expertise to perform the identified technical support functions, and that such performance will not prevent the timely performance of their other assigned functions, as specified in the emergency plan…*

*Additionally, the change justification should address the ability of on-shift positions to perform troubleshooting activities without interfering with their primary emergency response duties (e.g., on-shift electrical or mechanical maintenance personnel with supervisory personnel to provide oversight).*

*The guidance provided in the revised Table B-1 provides for three (3) 60-minute augmenting Engineering staff to provide augmentation (relief) for the on-shift engineering position at the declaration of an Alert or higher classification level.*

*Please provide further justification as to the necessary electrical and mechanical engineering expertise possessed by the Shift Foreman/STA to perform technical support functions for the additional timing requested, consistent with the guidance in RIS 2016-10 and the revised Table B-1, which serve as an acceptable means of meeting planning standard 10 CFR 50.47(b)(2). Additionally, as the Shift Foreman/STA is identified as the position on-shift to perform dose assessment, please provide further justification how providing this additional technical support impacts the ability to perform timely and accurate dose assessment.*

**PG&E Response RAI-6a:**

The proposed change to the DCPP E-Plan maintains the augmentation of an Electrical Coordinator and a Mechanical Coordinator within 60 minutes of an Alert or higher classification as discussed in RAI-7a.

The Maintenance Coordinators are OSC positions responsible for:

1) Planning and coordinating resources to conduct assessment, maintenance, repair or installation of special equipment,
2) Providing team status updates to the Team Coordinator, and
3) Providing technical advice to evaluation personnel in the TSC.

These positions are filled by Maintenance Foremen who typically hold current or previous qualifications as maintenance technicians. Training for these individuals is completed in accordance with the DCPP Mechanical Maintenance Personnel and Supervisor Task-to-Qualification Matrix. Additionally, work plan procedures provide authorization and processes for the performance of work in an emergency by knowledgeable personnel to minimize injury to personnel, damage to the facility and for the protection of the health and safety of the public.

Filling of these positions relieves the STA of Mechanical/Electrical responsibilities related to initial equipment failure investigation and troubleshooting.

The initial equipment failure investigation and troubleshooting is performed in accordance with DCPP Procedure MA1.ID26, "*Troubleshooting.*" Per MA1.ID26, Operations is responsible for problem identification and prioritization. Based on the prioritization of the issue the SM will direct personnel to begin the initial investigation process to determine if formal troubleshooting is required. The initial investigation process includes such actions as instrument channel checks, system walk downs, valve lineup verification, nonintrusive data gathering, nonintrusive leak checks, system reboots, etc. These initial investigative actions are typically performed by the on-shift operations personnel. The Electrical

Coordinator and Mechanical Coordinator response within 60 minutes supports additional issue investigation to include connecting test equipment, lifting leads, etc. and initiation and performance of maintenance related repair and corrective action activities. If the initial investigation cannot provide a resolution to the issue within a time-frame commensurate with the operational significance of the issue, then formal troubleshooting will be initiated in accordance with MA1.ID26. Mechanical and electrical engineering responders will be available within 90 minutes of an Alert or higher classification to provide technical expertise and investigation techniques to support Operations and Maintenance in performing their roles.

The augmentation of the Electrical Maintenance Coordinator and the Mechanical Maintenance Coordinator within 60 minutes of an Alert or higher provides for performance of initial equipment failure investigation and troubleshooting duties, thereby relieving the operations shift staff of those responsibilities supporting the extension of the Electrical Engineer and Mechanical Engineer positions to 90 minutes. The Ops Advisor in the CR will provide oversight for performance of these activities.

**PG&E Response RAI-6b:**

The Work Control Shift Foreman (WCSFM)/Shift Technical Advisor (STA) currently performs the technical support function and the on-shift Dose Assessment Task of the Radiological Assessment function until relieved within 60 minutes.

The proposed plan, as modified by the changes documented in the response to RAI-6a above, continues the responsibility for part of the Technical Support Function and the on-shift dose assessment task from 60 to 90 minutes. Specifically, in the technical support function the WCSFM/STA will retain the responsibility for Event Assessment.

Many of the parameters monitored, such as radiation monitor readings, containment temperature, level and pressure, RCS temperature, level and pressure, steam generator temperature, level and pressure, Engineered Safety Feature (ESF)/Emergency Core Cooling System (ECCS) system status and flow rates, etc., are common for assessment of event response including core damage, and radiological releases. In addition, the results of these various assessments are interrelated in that the results of one assessment provide inputs to corresponding assessments, e.g., plant system status assessments and core damage results are inputs to dose assessment. Technological improvements in event response assessments assist the WCSFM/STA in performing core damage and dose assessments during the extended time period.

As noted in Reference 1, technological improvement in the DCPP data display systems provide a wide range of plant parameters and associated alarms with

detailed trending capability to support rapid and continuous monitoring of plant conditions minimizing the burden of plant event assessment. Examples of these enhancements to event assessment include:

- Engineering Assessment/Core Damage Assessment display
- Radiological Assessment display
- Meteorological display
- Critical Safety Function Status Trees heads up display
- Detailed individual Critical Safety Function Status Tree display

Details Supporting WCSFM/STA Performance of the Extended Functions

Core Damage Assessment:

The WCSFM/STA is trained and qualified in the performance of core damage assessment and dose assessment. Initial core damage assessment is performed using DCPP Procedure EP RB-14A, "*Initial Detection of Fuel Cladding Damage*." This procedure addresses the first indications of fuel damage due to mechanical metallic impingement on fuel rods or short duration overheating of the core, which is assumed to be fuel cladding damage. To perform this assessment, the procedure utilizes a set of pre-established radiation values indicative of fuel cladding damage and compares these values to data provided by installed radiation monitors available on the plant data system displays and/or local surveys performed by Chemistry and Radiation Protection (C&RP) personnel. This allows for a quick determination of whether fuel cladding damage exists and supports evaluation of those EALs associated with fuel damage as well as source term selection for performance of dose assessment. This procedure is performed by the WCSFM/STA in the CR until relieved by the Reactor Engineer in the TSC. If necessary the WCSFM/STA can transition to EP RB-14, "*Core Damage Assessment Procedure*," which provides guidance for detailed assessments of post-accident fuel cladding damage and core (fuel melt) damage. The more detailed assessment of EP RB-14 is performed by obtaining containment high range radiation monitor readings, core exit thermal couple (CETC) readings, and hydrogen gas readings and dividing these values by the predicted values provided in graphical format in the procedure. This data can be readily obtained from the plant data display systems and the calculations performed to produce the required core damage assessment results. Long term core damage assessments will be based on chemical analysis once available, but this will not occur within the early phase of an accident. Both of these core damage assessment procedures are available for use by the WCSFM/STA and the Reactor Engineer such that equivalent capability is provided for both the on-shift and the augmented staff.

Dose Assessment:

The WCSFM/STA currently performs dose assessment using DCPP Procedure EP R-2, "*Release of Airborne Radioactive Materials Initial Assessment.*"

The response to RAI-3 provides a description of the available options for dose assessment in the CR and the UDAC and changes that will be made to on-shift capabilities as part of the proposed change.

As discussed in RAI-3, the MIDAS program is used by both the CR and the UDAC to perform dose assessments for use in EAL or PAR determination. EP R-2 currently provides guidance for using the following Menus of this software:

- Menu G (AUTO QUICK DOSE PROJECTION) – Provides dose assessment for plant vent stack and Steam Generator Tube Rupture (SGTR) releases using radiation monitor specific release source terms that reflect the most likely plant conditions at the onset and first hour of an accident. Radiation monitor and meteorological instrument readings are automatically populated form the plant data systems.
- Menu I (AUTO EVENT TREE 1228) - Used when the relevant release point radiation monitor readings and FMT data are not available. Site meteorological data is automatically populated from the plant data systems in conjunction with the same event tree selection used in the other menus to produce a bounding condition dose assessment for the selected events.
- Menu C (MANUAL EVENT TREE 1228) – Same as MENU I except that the meteorological data must be entered manually.
- Menu B (MANUAL ENHANCED DOSE PROJECTION) – Provides dose assessment methodology utilizing an event tree format for selecting a variety of different accident types, source terms, and release pathways. Radiological and meteorological data is entered manually.

The WCSFM/STA focuses on the automated menu options available to the CR to expedite dose assessment. For a monitored release, the MIDAS Menu G provides a dose assessment for EAL/PAR determination. The use of the MIDAS Event Trees focuses the WCSFM/STA on analysis of plant parameters similar to those used to evaluate other aspects of the event the WCSFM/STA is responsible for, such as reactor trip status, core status, etc. If the automatic population of data from plant data systems is not functioning then MENU B, I, or C will be used as appropriate. Regardless of the Menu used, the user selections needed for performing a dose assessment run are made using drop-down menu options with the logic for option selection based on data readily available to the user via the plant data system displays. This supports rapid completion of dose assessment runs with minimal distraction from other duties assigned to WCSFM/STA.

RAI-3 provides for additional dose assessment options to be added to EP R-2 to enhance the overall capability of the on-shift staff to perform dose assessments.

The additional Menu options added to EP R-2 will include:

- Menu H (AUTO ENHANCED DOSE PROJECTION) – Provides the same enhanced dose assessment methodology discussed above for Menu B except that the radiological and meteorological data is automatically populated.

- Menu K-W (AUTO MET FIELD MON TEAM CALC) – Uses field data (FMT or PIC gamma exposure rate and FMT Iodine Air Sample data) collected at the plume centerline as input for the dose calculation. Meteorological data is automatically populated, and the PIC data can be selected and populated from the plant data systems. This menu uses the same event tree selection methodology used in the other menus of this software.

- Menu E (MANUAL FIELD MON TEAM CALC) – Functions the same as MENU K-W except that the meteorological data must be entered manually.

These additional Menu options provide the individual performing the dose assessment with the capability to generate dose projections covering a wide array of accidents (Auto Enhanced Dose Projections) and back calculation of Field Team or environmental PIC data to better assess an unmonitored release. Like the current capability, each option contains an automated data entry mode to limit the burden on the dose assessor. A manual data entry option is provided as a back-up.

Summary

The WCSFM/STA provides engineering expertise on-shift in support of event response and mitigation. Assessment of the event includes monitoring various plant parameters via the plant data system displays and assessing event trajectory and the effectiveness of the response efforts based on plant data, core status, and radiological release status. The data used to perform these assessments is common to each assessment and is readily available on the plant data system displays. The performance of these assessments has been automated to include performance of radiological release assessments to minimize burden on the WCSM/STA.

To further support the extension of UDAC personnel response times to 90 minutes, the existing dose assessment capabilities will be revised to add the additional capabilities for use of FMT/PIC data in the automated and manual menus as well as adding the capability for use of the automated version of the enhanced dose assessment menu they are currently using in the manual mode.

Similarly, the existing on-shift capability of the WCSFM/STA to perform Core Damage Assessment supports extending the augmentation time of the Reactor Engineer from 60 to 90 minutes.

**RAI #7:**

*The proposed PG&E Figure 5-3, "OSC Organization," includes changes from the current DCPP Emergency Plan. Based on a review of the proposed Figure 5-3, it appears that DCPP proposes eliminate maintenance personnel while retaining their respective maintenance coordinators. However, the proposed Table 5-1, "DCPP on-Shift and Augmented ERO Minimum Staffing," includes maintenance personnel and does not specifically identify maintenance coordinators. The staff could not identify a discussion that supported this change. Additionally, no discussion relative to the responsibilities of the maintenance coordinators was apparent in the Evaluation of Proposed Changes.*

a. *Please provide justification for combining maintenance personnel with their respective maintenance coordinators. This justification should explain how the maintenance coordinators can perform both the maintenance technician role and the maintenance supervisor role for maintenance and troubleshooting activities as effectively as a maintenance technician and a maintenance supervisor.*

b. *Please explain what controls are in place to ensure that the maintenance coordinators possess the requisite qualifications and proficiencies to perform the ERO functions of maintenance technicians and maintenance coordinators.*

c. *Please explain why the maintenance coordinators are not identified on the proposed Table 5-1, since they are identified as responders within 60 and 90 minutes on Figure 5-3.*

d. *Please provide a justification for removing the Mechanical Maintenance (operations) position from the Plant System Engineering, Repair, and Corrective Actions Functional Area.*

e. *Please explain the basis why the Electrical/Instrument & Controls maintenance technicians were* initial placed on-shift provide justification for why this basis is no longer valid.

**PG&E Response RAI-7a:**

PG&E has reevaluated the proposed changes to Figure 5-3 for the Maintenance positions and agrees that separate identification of Maintenance Coordinator and Maintenance personnel positions is appropriate. Additionally, PG&E will maintain

the 60-minute response requirement for the Mechanical and Electrical Maintenance Coordinators as reflected in the proposed Table 5-1 of the DCPP E-Plan. The response time for the Maintenance Coordinators also provides relief of the technical support function as described in RAI-6a with respect to planning for event mitigation actions and assumption of supervisory responsibilities to relieve the on-shift staff.

Table 5-1 and Figure 5-3 of the proposed change has been revised to reflect this change. The affected pages of the proposed DCPP E-Plan are included in Attachment 1 (highlighted markup).

As discussed in the response to RAI-6a, Maintenance Coordinators are able to perform the maintenance tasks associated with their respective craft disciplines as well as make supervisory decisions on maintenance courses of action. Response within 60 minutes by Maintenance Coordinators ensures continued capability for performance of maintenance tasks in the early stages of event response. This approach is consistent with the SER approved E-Plan augmented response strategy. Additionally, as qualified Foremen, Maintenance Coordinators are able to initiate the investigative and troubleshooting procedure process that supports ongoing equipment repair.

This response is in alignment with the Revised NUREG-0654 Table B-1. The capability for performance of maintenance tasks within 60 minutes is performed by a qualified Maintenance Foreman. The Maintenance Foreman can initiate the troubleshooting process within the same timeframe. The use of a Maintenance Foreman integrates the maintenance and troubleshooting activities allowing for more efficient event response.

**PG&E Response RAI-7b:**

The Maintenance Coordinator prequalification, as documented in OM10.ID4, "Emergency Response Organization Management" identifies the maintenance discipline Foreman as a desired prerequisite. PG&E commits to revising this procedure to make this prerequisite mandatory for the Maintenance Coordinator position.

**PG&E Response RAI-7c:**

As noted in the response to RAI-7a, PG&E agrees to revise the proposed Table 5-1 to maintain the existing reference to 60-minute response times for the Mechanical and Electrical Maintenance Coordinators.

Based on this RAI, PG&E recognizes the 'Facility Activation' definition is unclear. The definition of 'Facility Activation' in Section 1 has been revised to clearly address appropriate Emergency Response facilities.

A revision to the affected pages of the proposed DCPP E-Plan are included in Attachment 1 (highlighted markup).

**PG&E Response RAI-7d:**

The Mechanical Maintenance (operations) position listed in Table 5-1A of the current DCPP E-Plan is an ancillary function performed by one of the on-shift operators. The reference was added to the DCPP E-Plan in Revision 4.13 to better align with NUREG-0654 Table B-1 formatting, which identifies that maintenance positions, "May be provided by shift personnel assigned other functions."

The proposed change credits ESFs for removal of the reference to performance of the mechanical maintenance function on-shift from Table 5-1A in accordance with Revised Table B-1 guidance. This change was validated during the shift staffing analysis and showed that there were no conflicting duties for on-shift personnel as a result of this change.

As described in the response to RAI-2, the same number of CR operators on-shift as the current PG&E E-Plan is being maintained.

**PG&E Response RAI-7e:**

Revision 2 of the DCPP E-Plan, dated February 1980, identified that personnel from the Maintenance departments were required to assist in fighting fires, clearing equipment or other duties as conditions would dictate. Included in this group, were Control Technicians, members of the Instrument Maintenance Department. In response to the August 26, 1980, NRC Request for Additional Information, PG&E added the Control Technician position to the on-shift staff to provide additional instrument and control expertise. This change was completed in order to align the on-shift staffing with NUREG-0654, Revision 1, Table B-1, and was not the result of an Atomic Safety Licensing Board (ASLB) Ruling or as a corrective action to a performance deficiency.

In Revision 3.10 of the DCPP E-Plan, dated April 1990, an operations position was added to the on-shift complement for performance of the Notification function and Firefighting functions transitioned to on-shift operators. In Revision 4.00 of the DCPP E-Plan, dated October 2001, the Firefighting function was assigned to an on-site Fire Department. As a result, performance of these functions by maintenance technicians is no longer required.

The proposed change credits ESFs for removal of Electrical/Instrumentation and Control (I&C) maintenance personnel from on-shift.

This change was validated during the shift staffing analysis and showed that no conflicting duties for on-shift personnel as a result of this change.

Enclosure
Attachment 1
PG&E Letter DCL-19-039

# DCPP Emergency Plan Replacement Pages (markup)

**Emergency Planning Zone (EPZ)**

A nominal 10-mile radius around the plant which potentially could be in the plume exposure pathway (established by federal criteria, 10 CFR 50.33.). The Diablo Canyon Emergency Planning Zone includes the federally required 10-mile radius (on land and over the ocean) and additional areas beyond the 10-mile radius as originally defined by the State of California and San Luis Obispo County, where protective actions (evacuation and/or sheltering) may be required. The land based portions of the DCPP EPZ are divided into 12 Protective Action Zones (PAZs) defined by local geographic boundaries (refer to section 2 of the DCPP Emergency Plan for a map of the EPZ).

**Emergency Worker Dose**

The dose received by a DCPP employee under emergency conditions. Emergency worker dose does not include public or occupational dose.

**Exclusion Area Boundary**

An exclusion area of such size that an individual located at any point on its boundary for two hours immediately following onset of the postulated fission product release would not receive a total radiation dose to the whole body in excess of 25 rem or a total radiation dose in excess of 300 rem to the thyroid from iodine exposure.

**Evacuation**

The urgent removal of people from an area to avoid or reduce high-level, short-term exposure, usually from the plume or from deposited activity. Evacuation may be a preemptive action taken in response to a facility condition rather than an actual release.

**Facility Activation**

An Emergency Response Facility is activated when the minimum staff per Figures 5-2, 5-3 and 5-4 are available and the facility is ready to assume assigned functions. Although the facility may be ready, the on-shift staff may prioritize completion of critical tasks prior to turnover.

**Independent Spent Fuel Storage Installation (ISFSI)**

The facility shown on ISFSI Final Safety Analysis Report (FSAR) Figure 4.1-1 that is used for dry storage of spent fuel.

**Intermediate Phase**

The period beginning after the incident source and releases have been brought under control and reliable environmental measurements are available for use as a basis for decisions on additional protective actions and extending until these protective actions are terminated. This phase may overlap the early and late phases and may last from weeks to many months. For the purpose of dose projection, it is assumed to last for one year.

g) Provide direction for all emergency response operations performed by Company personnel in the San Luis Obispo County area.

h) Authorize any extraordinary emergency measures, such as the use of Company emergency personnel exposure limits.

i) Approve information for inclusion in media releases.

2) The Shift Manager is responsible for ensuring the performance of the following delegable activities:

a) Notification of:

(1) Plant personnel

(2) Company offsite emergency organizations

(3) Local non-Company emergency support groups

(4) San Luis Obispo County, California Office of Emergency Services (CA OES) and the Nuclear Regulatory Commission

b) Maintain liaison with offsite emergency support groups.

### 5.3.3 Shift Foreman

Two Shift Foremen are on-shift in the normal operating organization. One Shift Foreman is assigned to each unit. A third Shift Foreman/Shift Technical Advisor (STA) is normally staffed on-shift for work control.

During an emergency, the Shift Manager assigns each Unit Shift Foreman to perform various roles such as:~~an emergency position. One Shift Foreman is responsible for emergency communications.~~

~~The other Shift Foreman provides plant management representation in the Control Room and:~~

1) Managinges operational activities.

2) Supervisinges the Control Room management in the operational control of the plant.

3) Advisinge the Site Emergency Coordinator on operational matters.

4) Overseeing emergency communications~~This position may be assigned other operational duties such as radwaste management as required by the situation~~.

4) Coordinating plant technical support.

5) Advising the Site Emergency Coordinator of actions and findings of support groups.

6) Assisting the Site Emergency Coordinator in determining personnel deployment for emergency support assignments.

7) Providing operation and control of emergency data transmission systems, and reviewing and evaluating plant data.

### 5.6.7 Plant Process Computer (PPC) Operator

The PPC Operator is responsible for the following activities:

1) Assisting the Reactor Engineer in reading the PPC data and preparing release pathway information for dose assessment purposes.

### 5.6.8 Mechanical Engineer

The Mechanical Engineer is responsible for the following activities:

1) Performing mechanical engineering assessments, trends and recommendations.

### 5.6.9 Electrical Engineer

The Electrical Engineer is responsible for the following activities:

1) Performing electrical engineering assessments, trends and recommendations.

### 5.6.10 Reactor Engineer

The Reactor Engineer is responsible for the following activities:

1) Performing reactor engineering assessments, trends and recommendations.

### 5.6.11 Operations Advisor

The Operations Advisor is responsible for the following activities:

1) Reporting initially to the Control Room to relieve the Shift Manager of plant operational oversight responsibilities. ~~provide additional event response support for the Operations Staff, including the provision of oversight of in-plant troubleshooting activities performed by augmented maintenance responders.~~

2) Report to the TSC SEC upon staffing of that facility.

~~1)~~3) Providing general operational advice and assistance to the SEC and TSC Staff.

### 5.6.12 Communications Advisor

4) Determining when an emergency exposure authorization is required and providing justification to the SEC or ED.

5) Keeping the Radiological Advisor, OSC Director and Team Coordinator informed of actions and findings.

6) Coordinating briefing and dispatch of personnel into affected plant areas with the OSC Team Coordinator.

### 5.7.6 Chemistry Coordinator

The Chemistry Coordinator is responsible for the following activities:

1) Directing radiological and chemical analysis of in plant samples.

2) Maintaining proper records and logs.

3) Keeping the Radiological Advisor informed of actions and findings.

4) Coordinating, briefing, and dispatching of personnel into the plant for sampling or analysis with the Site Radiation Protection Coordinator and Team Coordinator.

### 5.7.7 Operations Coordinator

The Operations Coordinator is responsible for the following activities:

1) Coordinating operation's response outside the Control Room.

2) Ensuring the Control Room is updated on status of OSC team assignments.

### 5.7.8 Onsite Field Monitoring Teams (FMTs)

The onsite Field Monitoring Team is responsible for the following activities:

1) Performing radiation surveys around the plant site and obtaining appropriate samples for analysis.

2) Maintaining initial communications with the Site RP Coordinator ~~Work Control Shift Foreman~~ and subsequently with the FMT Coordinator for reporting of monitoring results and maintaining cognizance of the emergency situation.

~~5.7.9 OSC Administrative Support~~

~~The OSC Administrative Support is responsible for the following activities:~~

~~1) Providing support as needed to maintain OSC records and status boards.~~

### ~~5.7.10~~5.7.9 Maintenance, RP, Chemistry and Operations Personnel

The following personnel provide support in planning and performing tasks in their disciplines.

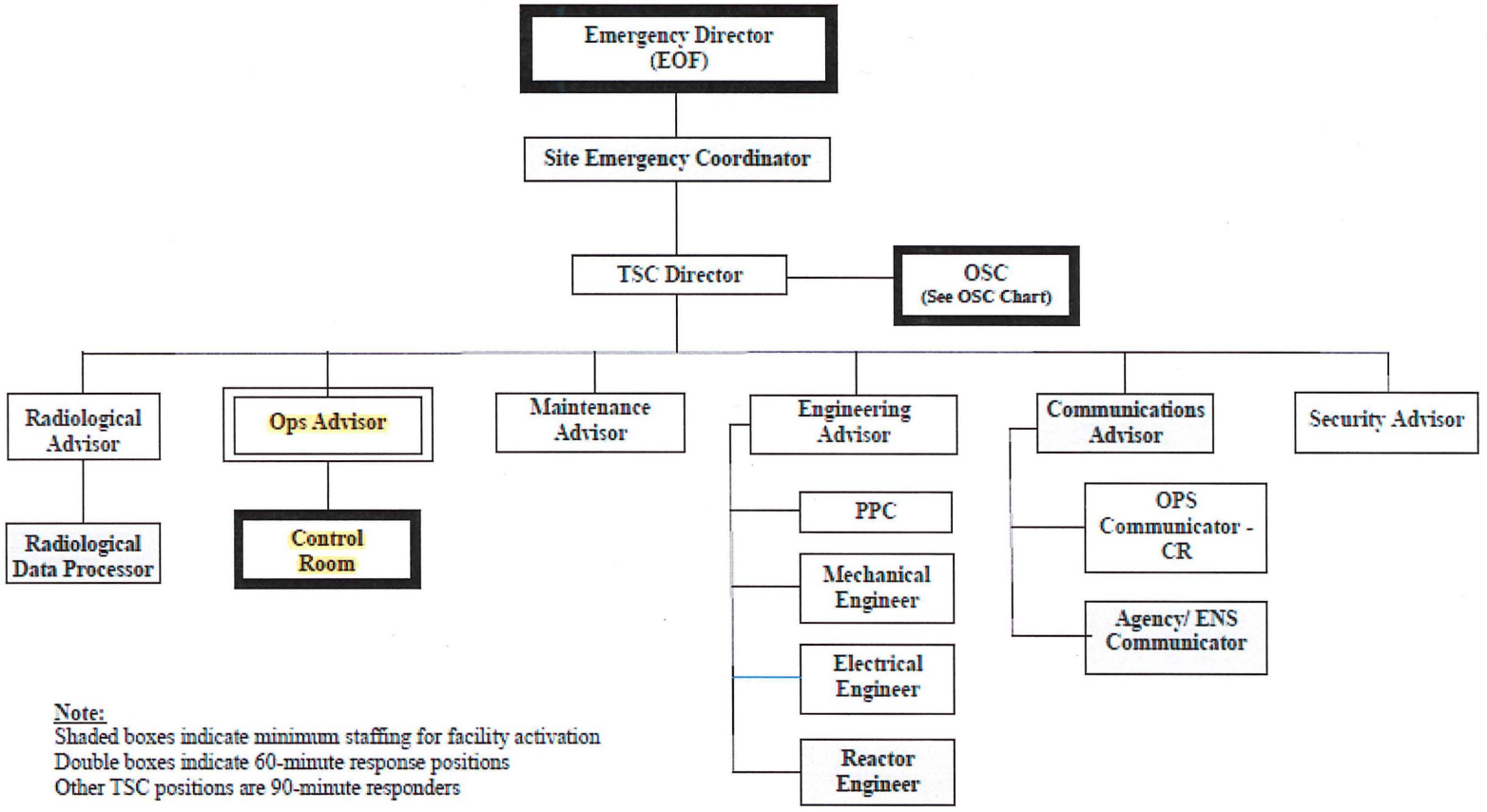
1) Mechanical Maintenance personnel

## ~~5.18~~5.19 TABLE ~~5-1A~~5-1, DCPP ON-SHIFT AND AUGMENTED ERO MINIMUM STAFFING

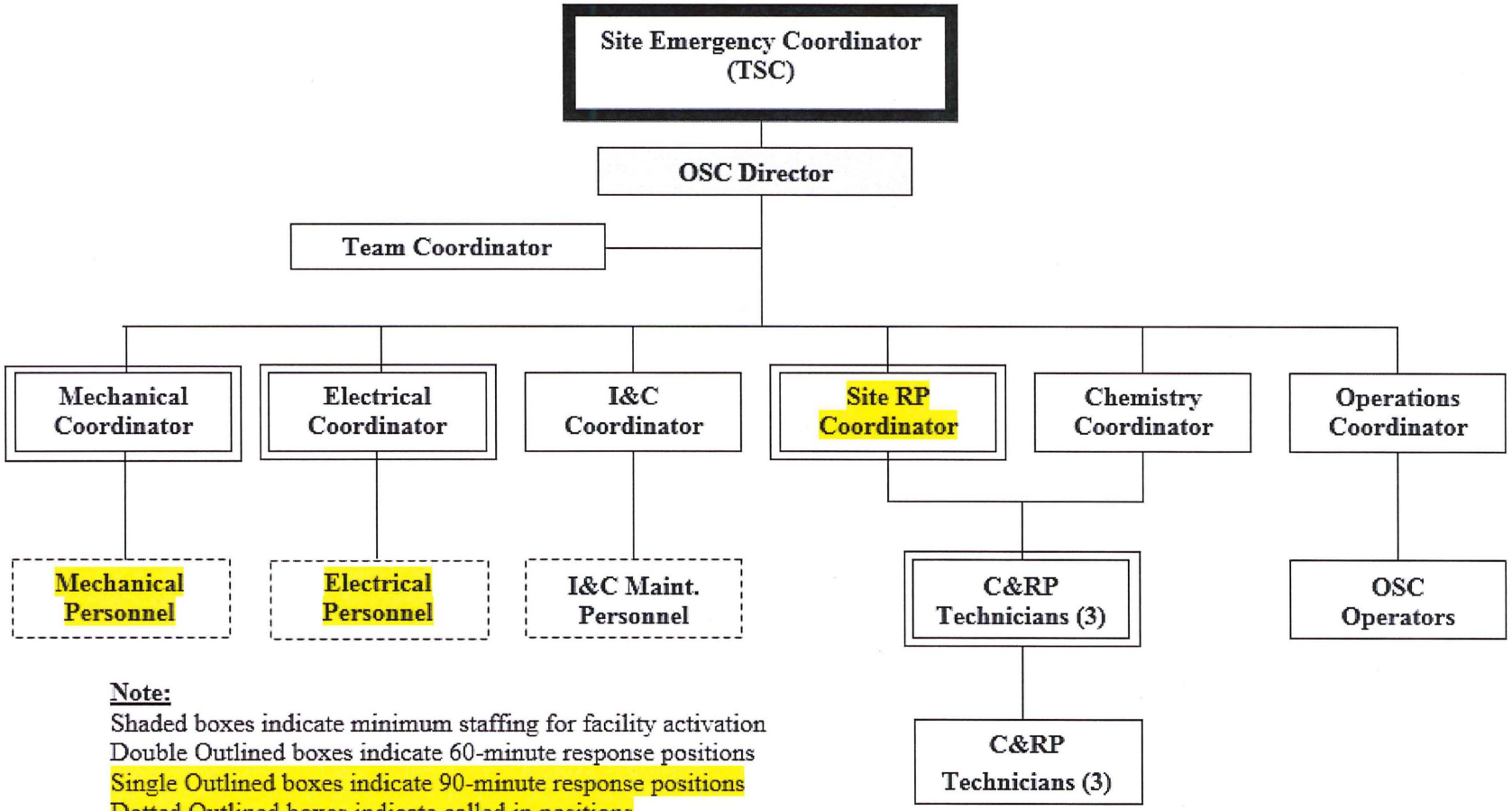
| Functional Area | Major Tasks | Emergency Positions | Shift Staffing | 60 Minutes | 90 Minutes |
|---|---|---|---|---|---|
| 1. Plant Operations and Assessment of Operational Aspects | Control Room Staff | Unit Shift Supervisor (SRO) | 2 | — | — |
| | | Operations Advisor (CR/TSC) | — | 1 | — |
| | | Control Room Operator (RO) | 4 | — | — |
| | | Non-Licensed Operator (NO) | 5 | — | — |
| 2. Emergency Direction and Control | Classification | Shift Manager | 1 | — | — |
| | | Site Emergency Coordinator (TSC) | — | — | 1 |
| | | Emergency Director (EOF) | — | — | 1 |
| 3. Notification & Communication | Licensee, Local/State Federal | Shift Phone Talker (SRO/RO/NO) | 1 | — | — |
| | | Shift Phone Talker (SRO/RO) | 1 | — | — |
| | | Agency/ENS Communicator (TSC) | — | — | 1 |
| | | Communications Advisor (TSC) | — | — | 1 |
| | | Communications Coordinator (EOF) | — | — | 1 |
| | | Offsite Communicator (EOF) | — | — | 1 |
| 4. Radiological Assessment | Dose Assessment | WC Shift Foreman (SRO) | 1* | — | — |
| | | Rad Data Processor (TSC) | — | — | 1 |
| | | Radiological Manager (EOF) | — | — | 1 |
| | | Dose Assessor (EOF) | — | — | 1 |
| | Offsite Surveys | FMT Leader (RP Technicians) | — | — | 2 |
| | | FMT Driver | — | — | 2 |
| | On-Site(out-of-plant) Surveys | Team Leader (RP Technician) | — | 1 | — |
| | | Team Driver | — | 1 | — |
| | In-plant Surveys | RP Technician | 2 | 2 | 2 |
| 5. Plant System Engineering, Repair, and Corrective Actions | Technical Support | WC Shift Foreman (SRO) / STA | 1 | — | — |
| | | Reactor Engineer (TSC) | — | — | 1 |
| | | Electrical Engineer (TSC) | — | — | 1 |
| | | Mechanical Engineer (TSC) | — | | 1 |
| | Repair and Corrective Actions | Mech. Maintenance Coordinator (OSC) | — | 1 | — |
| | | Elec. Maintenance Coordinator (OSC) | — | 1 | — |
| | | I&C Maintenance Coordinator (OSC) | — | — | 1 |
| | | OSC Director (OSC) | — | — | 1 |
| | | Site RP Coordinator (OSC) | — | 1 | — |
| 6. In-Plant PAs | Radiation Protection | RP Technician | 2* | 1 | 1 |
| 7. Firefighting | -- | Fire Department | 5 | Local Support | Local Support |
| 8. 1st Aid and Rescue Ops | -- | Industrial Fire Officers | 2* | Local Support | Local Support |
| 9. Site Access Control and Accountability | Security & Accountability | Security Personnel | Per Security Plan | Local Support | Local Support |
| **TOTAL:** | | | **22** | **~~8~~9** | **21** |

*May be performed by someone filling another position having functional qualifications

## ~~5.20~~5.21 FIGURE 5-2, TSC ORGANIZATION



~~5.21~~5.22 FIGURE 5-3, OSC ORGANIZATION



## Regulatory Commitments:

1) The Maintenance Coordinator pre-qualification, as documented in OM10.ID4, "Emergency Response Organization Management," identifies the maintenance discipline Foreman as a desired prerequisite. PG&E commits to revising this procedure to make this prerequisite mandatory for the Maintenance Coordinator position.

2) The Operations Advisor pre-qualification, as documented in OM10.ID4, "Emergency Response Organization Management," identifies the Shift Foreman/SRO license qualification as a desired prerequisite. PG&E commits to revising this procedure to make this prerequisite mandatory for the Operations Advisor position.

3) To further support the extension of UDAC personnel response times to 90 minutes, the existing dose assessment capabilities will be revised to add the additional capabilities for use of FMT/PIC data in the automated and manual menus as well as adding the capability for use of the automated version of the enhanced dose assessment menu they are currently using in the manual mode.

   Specifically, MIDAS Menu's H, K-W, and E as discussed in the response to RAI-6b will be added to current CR Dose Assessment procedural guidance.