Pacific Gas and Electric Company

James R. Becker
Vice President-Diablo Canyon
Operations and Station Director

Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93424

805.545.3462
Fax: 805.545.4234

July 30, 2004

PG&E Letter DCL-04-096

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

Docket No. 50-323, OL-DPR-82
Diablo Canyon Unit 2
Emergency License Amendment Request 04-03
Revision to Technical Specification 3.6.6, "Containment Spray and Cooling Systems"

In accordance with 10 CFR 50.90, enclosed is an application for amendment to Facility Operating License No. DPR-82 for Unit 2 of the Diablo Canyon Power Plant (DCPP). The enclosed license amendment request (LAR) proposes a one-time change to the Completion Time of Required Action A.1 of Technical Specification (TS) 3.6.6, "Containment Spray and Cooling Systems," to increase the Completion Time for the Unit 2 Containment Spray Pump (CSP) 2-2 during Unit 2 cycle 12, from 72 hours to 14 days. The 125-volt DC control circuit cable for the CSP 2-2 supply breaker is experiencing multiple grounds and requires repair.

This LAR is submitted on an emergency basis to allow completion of activities to prepare for and perform repairs on the CSP 2-2 supply breaker control circuit cable, currently in progress, without forcing a Unit 2 shutdown. The grounded cable condition was discovered July 28, 2004, during post maintenance testing for a temporary modification installed to bypass a single grounded conductor discovered earlier in the affected control circuit cable. The initial ground for which the modification was being installed did not impact CSP 2-2 operability. However, the subsequently discovered multiple grounds affect the control function. Therefore, at 0525 PDT on July 28, 2004, CSP 2-2 was declared inoperable due to multiple grounds in the control circuit cable.

Enclosure 1 contains a description of the proposed change, the supporting technical analyses, and the no significant hazards consideration determination. Enclosures 2 and 3 contain marked-up and retyped (clean) TS pages, respectively. Enclosure 4 contains the marked-up TS Bases page (for information) indicating the changes that will be implemented pursuant to TS 5.5.14, "Technical Specifications (TS) Bases Control Program," at the time this amendment is implemented.

PG&E has determined that this LAR does not involve a significant hazards consideration as determined per 10 CFR 50.92. Pursuant to 10 CFR 51.22(b), no

A001

environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of this amendment.

Approval is requested on an emergency basis to preclude a forced shutdown of Unit 2. PG&E requests the license amendment be made effective upon NRC issuance, to be implemented on or before 0525 PDT on July 31, 2004.

If you have any questions or require additional information, please contact Stan Ketelsen at 805-545-4720.

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

Executed on July 30, 2004.

James R. Becker
Vice President - Diablo Canyon Operations and Station Director

jer1/3664
Enclosures
cc: Edgar Bailey, DHS
Bruce S. Mallett
David L. Proulx
Diablo Distribution
cc/enc: Girija S. Shukla

EVALUATION

1.0 DESCRIPTION

This letter is a request to amend Operating License DPR-82 for Unit 2 of the Diablo Canyon Power Plant (DCPP).

This amendment would provide a one-time change to Completion Time (CT) of Required Action A.1 of Technical Specification (TS) 3.6.6, "Containment Spray and Cooling Systems," to increase the CT for the Unit 2 Containment Spray Pump (CSP) 2-2 during Unit 2 cycle 12, from 72 hours and 10 days from discovery of failure to meet the limiting condition of operation (LCO) to 14 days and 14 days, respectively, in order the complete control circuit cable maintenance.

2.0 PROPOSED CHANGE

The proposed change would revise the CT of Action A.1 of TS 3.6.6 to add a Note stating "The Condition A Completion Times may be extended to 14 days for Unit 2 cycle 12 for containment spray pump 2-2 control circuit cable maintenance."

Enclosures 2 and 3 contain marked-up and retyped (clean) TS pages, respectively. Enclosure 4 provides (for information only) the marked-up TS Bases page showing the changes that will be implemented pursuant to TS 5.5.14, "Technical Specifications (TS) Bases Control Program," at the time this amendment is implemented.

3.0 BACKGROUND

System Description

The Containment Spray System consists of two separate trains of equal capacity, each capable of meeting the design bases. Each train includes a containment spray pump, spray headers, nozzles, valves, and piping. Each train is powered from a separate Engineered Safety Features bus. The refueling water storage tank (RWST) supplies borated water to the Containment Spray System during the injection phase of operation.

In the recirculation mode of operation, containment spray is supplied by manual realignment of the residual heat removal (RHR) pumps to supply the containment spray headers after the RWST is empty.

The Containment Spray System provides a spray of cold borated water mixed with sodium hydroxide (NaOH) from the spray additive tank into the upper regions of containment to reduce the containment pressure and temperature, and to reduce fission products from the containment atmosphere during a Design Basis Accident (DBA). The RWST solution temperature is the key factor in determining the heat removal capability of the Containment Spray System during the injection phase. In the recirculation mode of operation, heat is removed from the containment sump water by the RHR heat exchangers. Each train of the Containment Spray System provides adequate spray coverage to meet the system design requirements for containment atmospheric heat removal.

Circumstances Leading to CSP 2-2 Inoperability

On May 19, 2004, at 1329 PDT, an alarm was received in the Unit 2 control room indicating a ground on 125-volt DC Bus 2-3. No maintenance or operational activities involving this bus were evident, and increased surveillance was initiated in accordance Operations Administrative Procedure OP1.DC24, "Control of Main Annunciator System Problems." The ground worsened slowly with time (increasing from -5 milliamperes (mA) on May 19, 2004, to -13.5 mA on May 26, 2004) but not to the point of becoming a "solid ground" that would be indicated by approximately -50 mA by the ground detector. On June 4, 2004, the investigation concluded that the ground was on conductor 2-1 in the breaker control circuit cable for CSP 2-2. An operability assessment was performed that concluded CSP 2-2 remained operable because conductor 2-1 provides an alarm and indication only, and provides no control function affecting operation of the breaker. No other problems affecting CSP 2-2 operability were evident at the time.

On July 28, 2004 at 0525 PDT, the Unit 2 Shift Foreman declared CSP 2-2 inoperable to install a temporary modification to bypass conductor 2-1, so it could be removed from service. On July 28, 2004, during post-maintenance testing of the temporary modification, the ground on 125-volt DC Bus 2-3 still remained. Investigation revealed additional conductors in the cable were grounded. Since the newly identified grounded conductors provide breaker control functions, CSP 2-2 could not be returned to operable status. Thus, CSP 2-2 remains in Condition A of TS 3.6.6.

TS 3.6.6

The TS 3.6.6 LCO states: "The containment fan cooling unit (CFCU) system and two containment spray trains shall be OPERABLE." TS 3.6.6 is applicable in Modes 1, 2, 3, and 4.

With one containment spray train inoperable, TS 3.6.6, Required Action A.1 requires that the inoperable containment spray train be restored to operable status within 72 hours and 10 days from discovery of failure to meet the LCO.

If this action is not met, TS 3.6.6, Action B.1 and B.2 require placing the unit in Mode 3 within 6 hours and in Mode 5 within 84 hours.

4.0. JUSTIFICATION AND BASIS FOR THE EMERGENCY CIRCUMSTANCES

This license amendment request is submitted on an emergency basis to allow completion of maintenance on the CSP 2-2 supply breaker control circuit cable without forcing a Unit 2 shutdown. As discussed in the probabilistic risk assessment below, extending the TS 3.6.6 Required Action A.1 CT from 72 hours to 14 days results in no significant increase in risk.

Activities to prepare for and perform repairs to the control circuit are currently in progress and are being worked on a 24-hour schedule until completion per DCPP Administrative Procedure AD7.ID4, "On-line Maintenance Scheduling." In addition, the following compensatory actions are being taken and will continue until the maintenance and post-maintenance testing are complete, in order to minimize the increase in risk during the 14-day period when CSP 2-2 is inoperable.

- During the repair of the CSP 2-2 control circuit cable, no other planned maintenance or testing will be performed that would render the Unit 2 containment spray and cooling systems or associated support systems inoperable.

- Any planned containment spray and cooling systems maintenance and surveillance testing will be suspended until the repair of the CSP 2-2 control circuit cable is completed and the associated containment spray train returned to service.

- High risk plant evolutions will be avoided.

5.0 TECHNICAL ANALYSIS

5.1 Containment Spray Safety Analysis Basis

During a design basis loss-of-coolant accident, a minimum of two containment fan cooling units (CFCUs) and one containment spray train are required to maintain the containment peak pressure and temperature below the design limits. Additionally, one containment spray train is also required to remove iodine from the containment atmosphere and maintain concentrations below those assumed in the safety analysis. To ensure that these requirements are met, two containment spray trains and the CFCU system consisting of four CFCUs or three CFCUs each supplied by a different vital bus must be operable. Therefore, in the event of an accident, at least one train of containment spray and two CFCUs will operate, assuming the worst case single active failure occurs. Each containment spray train typically includes a spray pump, spray headers, nozzles, valves, piping, instruments, and controls to ensure an operable flow path capable of taking suction from the refueling water storage tank (RWST) upon an engineered safety feature actuation signal. Upon actuation of the RWST low-low alarm, the containment spray pumps are secured. Containment spray can then be supplied as required by a residual heat removal pump taking suction from the containment sump.

With one containment spray train inoperable, TS 3.6.6, Required Action A.1 requires that the inoperable containment spray train be restored to operable status within 72 hours. In this condition, the remaining operable spray and cooling trains are adequate to perform the iodine removal and containment cooling functions. The 72-hour CT takes into account the redundant heat removal capability afforded by the containment spray system, reasonable time for repairs, and low probability of a design basis accident occurring during this period.

During the time Unit 2 is in the 14-day TS CT, 100 percent of the containment spray flow required to mitigate design basis accidents can be provided by the operable containment spray train. Without the requirement to postulate a single failure during this period, there are no situations in which the 14 day CT would result in failure to meet an intended safety function.

5.2 Probabilistic Risk Assessment (PRA) Evaluation

The risk impact of the proposed change has been evaluated using NRC's three-tier approach suggested in Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," August 1998.

Tier 1 - PRA Capability and Insights,
Tier 2 - Avoidance of Risk-Significant Plant Configurations, and
Tier 3 - Risk-Informed Configuration Risk Management

Tier 1: PRA Capability and Insights

PRA Capability

The scope, level of detail, and quality of the Diablo Canyon PRA (DCPRA) are sufficient to support a technically appropriate and realistic evaluation of the risk change from this proposed CT extension. The DCPRA used in this evaluation addresses internal events at full power. The DCPRA is applicable to DCPP Unit 2.

The DCPRA is based on the original 1988 Diablo Canyon PRA that was performed as part of the Long Term Seismic Plan. The DCPRA-1988 was a full scope Level 1 PRA that evaluated internal and external events. The DCPRA was subsequently updated to support the Individual Plant Examination (IPE) (1991) and the Individual Plant Examination for External Events (IPEEE) (1993). Since 1993, several other updates have been made to incorporate plant and procedure changes, update plant specific reliability and unavailability data, improve the fidelity of the model, incorporate Westinghouse Owners Group (WOG) Peer Review comments, and support other applications, such as On-line Maintenance and Risk-Informed In-Service Inspection.

Prior to the IPE submittal, the model was enhanced to include the probability of a loss-of-offsite power (LOSP) subsequent to non-LOSP initiating events. Other improvements to the PRA model, since the IPE, that affect this submittal include:

- Incorporation of sixth diesel generator
- Upgraded auxiliary saltwater system modeling to make it more consistent with the Station Blackout submittal
- Allowed credit for cross-tie of vital 4kV buses (i.e., one diesel generator (DG) feeds loads on two vital buses)
- Added 500kV switchyard model, to supplement 230kV switchyard
- Added more detailed modeling for transient-induced loss-of-coolant accidents (LOCAs) from LOSP, including the third PORV
- Updated initiating event frequencies to reflect data from NUREG-5750

The DCPRA was recently enhanced to support the analysis of the DG CT extension. The most significant change made was to the Reactor Coolant Pump (RCP) Seal LOCA model. The updated DCPRA now uses the Rhodes Model to characterize the RCP seal performance on loss of cooling and seal injection. The Rhodes model has been accepted by the NRC.

The DCPRA includes an evaluation of containment performance. A simplified large early release frequency (LERF) model, based on the Level 2 PRA, is used for calculating LERF for internal, seismic and fire scenarios.

The DCPRA is a living PRA, which is maintained through a periodic review and update process.

Peer Review Certification of the DCPRA, using the WOG Peer Review Certification Guidelines, was performed in May 2000. This Peer Review Certification was carried out by a team of independent PRA experts from U.S. nuclear utility PRA groups and PRA consultant organizations. This intensive peer review involved about two person-months of engineering effort by the being out of service for an extended time (i.e., 14 days) and quantifying its impact on risk.

The risk impact was evaluated using the following steps.

1) Calculate the base CDF and LERF using the baseline PRA model.
2) Modify the baseline model to reflect one of the CS trains being out of service and re-calculate the CDF and LERF.
3) Calculate the risk impact of the proposed change using the RG 1.177 risk metrics described below and compare them to the Acceptance Criteria.

Risk Metrics

ΔCDF_{AVE} = change in the annual average CDF due to an expected unavailability of one of the CS trains that could result from the increased CTs. This risk metric is compared against the criteria of RG 1.174 to determine whether a change in CDF is regarded as risk significant. These criteria are a function of the baseline annual average CDF, CDF_{BASE}.

$\Delta LERF_{AVE}$ = change in the annual average LERF due to an expected unavailability of one of the CS trains that could result from the increased CT. Similar to ΔCDF_{AVE}, RG 1.174 criteria were also applied to judge the significance of changes in this risk metric.

ICCDP = incremental conditional core damage probability with one CS train out-of-service for an interval of time equal to the proposed CT (i.e., 14 days). This risk metric is used as suggested in RG 1.177 to determine whether a proposed CT has an acceptable risk impact.

ICLERP = incremental conditional large early release probability with one CS train out-of-service for an interval of time equal to the proposed CT. Similar to *ICCDP*, RG 1.177 criteria were also applied to judge the significance of changes in this risk metric.

The above risk metrics were quantified using the equations provided below.

Change in CDF/LERF

The change in the annual average CDF, ΔCDF_{AVE}, was evaluated by computing the following equation.

$$\Delta CDF_{AVE} = \left(\frac{T_{OOS}}{T_{YEAR}}\right) \times \left(CDF_{OOS} - CDF_{BASE}\right) \qquad \text{(Equation 1)}$$

review team and provided a comprehensive assessment of the strengths and limitations of each element of the PRA. On the basis of its evaluation, the Certification Team determined that, with certain findings and observations addressed, the quality of all elements of the PRA would be sufficient to support risk significant evaluations with defense-in-depth input relative to the requested CT extension. All of the findings and observations from this assessment, which the review team indicated were important or which involved risk elements that are needed to evaluate the proposed CT extension, were appropriately dispositioned. As a result, a number of modifications were made to the PRA model prior to its use to support these proposed changes. A major enhancement was the reanalysis and updating of the pre- and post-initiating event human reliability assessments (HRA).

In addition to the Peer Certification, a limited scope, independent assessment of the DCPRA was performed by an industry PRA expert prior to completing the extended DG CT analysis. The assessment focused on the elements required to support the DG LCO CT extension.

As a result of the sound basis of the original model as documented in NUREG-0675 Supplement No. 34 and NUREG/CR-5726, the considerable effort to incorporate the latest industry insights into the PRA, self-assessments, and certification peer reviews, PG&E is confident that the results of the risk evaluation are technically sound and consistent with the expectations for PRA quality set forth in RG 1.177 and 1.174.

Fire and Other External Events

A fire analysis was conducted as part of the original DCPP PRA (DCPRA-1988) as part of the Long Term Seismic Program. The NRC reviewed the LTSP and issued SSER-34 accepting DCPRA-1988. The Fire PRA was updated to support the 1993 IPEEE. Other than Control Room (CR) and Cable Spreading Room (CSR) fire scenarios, the Fire PRA quantifies the core damage frequency (CDF) associated with most internal fire initiating events using the same linked event tree models as the internal and seismic events analyses. Separate event trees using conservative assumptions were developed for evaluating CR and CSR fire scenarios.

The evaluation of high winds, external floods, and other external events, which was done as part of the IPEEE, revealed no potential vulnerabilities.

Methodology

The general methodology of evaluating the proposed change involves identifying the areas of concern relating to a Containment Spray (CS) train where the following definitions apply:

T_{OOS} = expected time that one CS train is expected to be unavailable as a result of the increased CT.

CDF_{OOS} = Annual average CDF with one CS train out of service.

CDF_{BASE} = Baseline annual average CDF with average unavailability of the CS trains with the current TS CT. This is the CDF result of the current baseline DCPRA.

$(CDF_{OOS} - CDF_{BASE})$ = Change (i.e., increase) in CDF due to one CS train being unavailable for a whole year.

A similar approach was used to evaluate the change in the average LERF ($\Delta LERF_{AVE}$).

$$\Delta LERF_{AVE} = \left(\frac{T_{OOS}}{T_{YEAR}}\right) \times \left(LERF_{OOS} - LERF_{BASE}\right) \qquad \text{(Equation 2)}$$

where the following definitions were applied:

$LERF_{OOS}$ = LERF evaluated from the PRA model for with one CS train unavailable.

$LERF_{BASE}$ =Baseline annual average LERF with average unavailability of the CS trains consistent with the current TS CT. This is the LERF result of the current baseline DCPRA.

$(LERF_{OOS} - LERF_{BASE})$ = Change (i.e., increase) in LERF due to one CS train being out-of-spec for a whole year.

Incremental Conditional Probabilities

The incremental conditional core damage probability (ICCDP) and incremental conditional large early release probability (ICLERP) are computed using their definitions in RG 1.177. The ICCDP values are dimensionless probabilities used to evaluate the incremental probability of a core damage event over a period of time equal to the extended CT. This should not be confused with the evaluation of ΔCDF_{AVE}, in which the CDF is based on expected unavailability. However, the endstate frequencies used to calculate ICCDP/ICLERP are the same as those used to calculate the change in CDF/LERF as described in the previous section.

The ICCDP is calculated by multiplying the change in CDF by the proposed TS CT (T_{CT}). Therefore,

$$ICCDP = (CDF_{OOS} - CDF_{BASE}) \times CT \qquad \text{(Equation 3)}$$

Similarly, ICLERP is defined as follows:

$$ICLERP = (LERF_{OOS} - LERF_{BASE}) \times CT \qquad \text{(Equation 4)}$$

where CT is the proposed TS completion time (i.e., 14 days).

<u>Assumptions/Assertions</u>

1. The calculations for change in CDF conservatively neglect the decrease in the CDF contribution that would result from avoiding a TS-driven shutdown required by the current TS CT.
2. The impact of a CS train being out of service at lower operating modes (i.e., 2, 3, and 4) is bounded by the power operations impact. Therefore no separate risk evaluation at the lower modes is necessary.
3. The internal fire and seismic models were not used for this application on the basis that:

   - None of the fire events are considered to result in an inside containment pressurization event
   - Since the piping inside containment is robust, it is judged that those seismic events that are severe enough to cause an inside containment pipe rupture would have such a significant impact on the other safety-related equipment, that it would make the unavailability of the CS train inconsequential

<u>Input</u>

1. The expected mean outage time, T_{OOS}, is 10 days. This is based on the input from the plant maintenance and engineering organizations.

<u>Acceptance Criteria</u>

The acceptance guidelines for TS changes are provided in Sections 2.2.4 and 2.2.5 of RG 1.174 and for AOT changes in Section 2.4 of RG 1.177.

The impact of the proposed change is considered very small and low risk if the estimated risk metric values are less than those listed below.

Similarly,

$$\begin{aligned}\Delta LERF_{AVE} &= \left(\frac{10day}{365day}\right)\times 0\\ &= 0\end{aligned}$$

Incremental Conditional Probabilities (ICP)

The ICPs are calculated based on Equations 3 and 4.

$$\begin{aligned}ICCDP &= (CDF_{OOS} - CDF_{BASE})\times CT\\ &= \Delta CDF \times CT\\ &= 1.0E-10\times(14days)\times\left(\frac{1yr}{365days}\right)\\ &= 3.8E-12\end{aligned}$$

Similarly,

$$\begin{aligned}ICLERP &= (LERF_{OOS} - LERF_{BASE})\times CT\\ &= \Delta LERF \times CT\\ &= 0\times(14days)\\ &= 0\end{aligned}$$

Results and Conclusion

The Table below lists the results of the risk metrics along with their RG 1.177 acceptance criteria.

Risk Metric	Calculated Value	Acceptance Criteria
ΔCDF_{AVE}	2.7E-12	1.0 E-06 per reactor year
$\Delta LERF_{AVE}$	0	1.0 E-07 per reactor year
$ICCDP$	3.8E-12	5.0 E-07
$ICLERP$	0	5.0 E-08

The calculated risk metric values are all within acceptable limits and therefore from the risk informed perspective, the proposed change to the CT for one CS train inoperable to 14 days has a negligible impact on overall plant risk.

Risk Metric	Acceptance Criteria
ΔCDF_{AVE}	1.0 E-06 per reactor year
$\Delta LERF_{AVE}$	1.0 E-07 per reactor year
$ICCDP$	5.0 E-07
$ICLERP$	5.0 E-08

Calculation

1) Calculate the base CDF and LERF using the baseline PRA model.

The results of the baseline model are:

$$CDF_{BASE} = 7.6517E-06$$
$$LERF_{BASE} = 4.8527E-07$$

2) Modify the baseline model to reflect one of the CS trains being out of service and re-calculate the CDF and LERF.

The recalculated CDF and LERF values are:

$$CDF_{OOS} = 7.6518E-06$$
$$LERF_{OOS} = 4.8527E-07$$

$$\Delta CDF = (7.6518E-06 - 7.6517E-06)$$
$$= 1.0E-10$$

$$\Delta LERF = (4.8527E-07 - 4.8527E-07)$$
$$= 0$$

3) Calculate the RG 1.174 Risk Metrics

Change in CDF/LERF

Using the Equations 1 and 2, the changes in the annual average CDF and LERF are calculated as follows:

$$\Delta CDF_{AVE} = \left(\frac{T_{OOS}}{T_{YEAR}}\right) \times \Delta CDF$$
$$= \left(\frac{10day}{365day}\right) \times 1.0E-10$$
$$= 2.7E-12$$

Risk Insights

Based on the results above, it is evident that the availability of the CS system has a minimal impact on the overall plant risk. This is due to:

- The CS system is not credited in the PRA to prevent the occurrence of core damage.
- The unavailability of the CS system has negligible impact on the reliability of other core damage mitigating functions.
- The CS system is not credited to prevent large-early release events.
- The unavailability of the CS system has negligible impact on the reliability of other large-early release mitigating functions.
- The initiating events that would result in the actuation of the CS system have low frequency (e.g., combined frequency of MLOCA and LLOCA is in the range of 1E-5 per year)

5.3 Tier 2: Avoidance of Risk-Significant Plant Configurations

Potential configurations that should be avoided while a CS train is out of service are 1) unavailability of any CFCUs and 2) any activities that could reduce the availability of the other CS train. Adhering to the current TS requirements will prevent these types of risk-significant configurations from being entered into. Therefore there is reasonable assurance that risk-significant plant equipment configurations will not occur when one CS train is out of service using the proposed TS changes. No other enhancement to the TS or procedures, or any compensatory actions are recommended as the result of this LAR.

5.4 Tier 3: Risk-Informed Configuration Risk Management Program

DCPP has developed a process for online risk assessment and management. Following the process and associated procedures ensures that the risk impact of equipment unavailability is appropriately evaluated prior to performing any maintenance activity or following an equipment failure or other internal or external event that impacts risk. DCPP procedure AD7.DC6 provides guidance for managing safety functions, probabilistic risk assessment CTs, and plant trip risks as required by 10CFR50.65(a)(4) of the Maintenance Rule. The procedure addresses risk management practices in the maintenance planning phase and maintenance execution (real time) phase for Modes 1 through 4. Appropriate consideration is given to equipment unavailability, operational activities such as testing, and weather conditions.

In general, risk from performing maintenance on-line is minimized by:

- Performing only those preventive and corrective maintenance items on-line required to maintain the reliability of structures, systems or components (SSCs).
- Minimizing cumulative unavailability of safety-related and risk-significant SSCs by limiting the number of at-power maintenance outage windows per cycle per train/component.
- Minimizing the total number of SSCs out-of-service (OOS) at the same time.
- Minimizing the risk of initiating plant transients (trips) that could challenge safety systems by implementing compensatory measures.
- Avoiding higher risk combinations of OOS SSCs using PRA insights.
- Maintaining defense-in-depth by avoiding combinations of OOS SSCs that are related to similar safety functions or that affect multiple safety functions.
- Scheduling in train/bus windows to avoid removing equipment from different trains simultaneously.

In general, risk is managed by:

- Evaluating plant trip risk activities or conditions and mitigating them by taking appropriate compensatory measures and/or ensuring defense-in-depth of safety systems that are challenged by a plant trip.
- Evaluating and controlling risk-based on probabilistic and key safety function defense-in-depth evaluations.
- Implementing compensatory measures and requirements for management authorization or notification for certain "high-risk" configurations.

Actions are taken and appropriate attention is given to configurations and situations commensurate with the level of risk as evaluated using AD7.DC6. This occurs both during planning and real time (execution) phases.

For planned maintenance activities, an assessment of the overall risk of the activity on plant safety, including benefits to system reliability and performance, is currently performed and documented per AD7.DC6 prior to scheduled work. Consideration is given to plant and external conditions, the number of activities being performed concurrently, the potential for plant trips, and the availability and "health" of redundant trains.

Risk is evaluated, managed and documented for all activities or conditions based on the current plant state:

- Before any planned or emergent maintenance is to be performed.
- As soon as possible when an emergent plant condition is discovered.
- As soon as possible when an external or internal event or condition is recognized.

Compensatory measures are implemented as necessary and if the risk assessment reveals unacceptable risk, a course of action is determined in order to restore degraded or failed safety functions and reduce the probabilistic risk.

RG 1.177 requires the evaluation of the proposed change on the total risk (i.e., on-line and shutdown risk). This evaluation only quantifies the risk associated with being either in Modes 1, 2, 3, or 4 with one inoperable CS train. This is conservative since the risk of the TS driven shut down is not used to balance the risk of the proposed extended CT.

Summary

Based on the limited extent of the maintenance activity, maintaining the capability to provide 100 percent containment spray flow while in the 14-day CT, and the low risk associated with a 14-day CT, PG&E believes there is reasonable assurance that the health and safety of the public will not be adversely affected by the proposed TS change.

6.0 REGULATORY ANALYSIS

6.1 No Significant Hazards Consideration

PG&E has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The requested action does not physically alter any plant structures, systems, or components, and does not affect or create new accident initiators or precursors. The completion time (CT) to perform a required action is not an accident initiator; therefore, there is no effect on the probability of accidents previously evaluated.

The containment spray system is required to mitigate the consequences of accidents previously evaluated in the Final Safety Analysis Report Update. The requested action to allow Containment Spray Pump (CSP) 2-2 to be inoperable for up to 14 days does not significantly increase the consequences of those accidents due to the low probability of an accident occurring during the time of pump inoperability. Additionally, the redundant containment spray train remains operable and capable of performing its required function. The requested action does not affect the types or amounts of radionuclides released following an accident, or the initiation and duration of their release.

Therefore, the probability of occurrence or the consequences of accidents previously evaluated are not significantly increased.

2. Does the proposed change create the possibility of a new or different accident from any accident previously evaluated?

Response: No.

The proposed change to allow CSP 2-2 to be inoperable for up to 14 days does not introduce new failure modes or mechanisms associated with plant operation. Furthermore, the 14-day CT associated with the restoration of the Unit 2 containment spray train would not create a new accident type.

Therefore, the change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

PG&E has determined that no significant risk is associated with extending the Condition A CTs to 14 days. Although the proposed action deviates from a requirement in TS 3.6.6, it does not affect any safety limits, other operational parameters, or setpoints in the TS, nor does it affect any margins assumed in the accident analyses. The redundant containment spray train is operable and therefore able to perform its required design function.

Therefore, the proposed action does not significantly reduce a margin of safety.

Based on the above evaluation, PG&E concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

6.2 Applicable Regulatory Requirements/Criteria

The CS and CFCU systems provide containment atmosphere cooling to limit post accident pressure and temperature in containment to less than the design values. Reduction of containment pressure and the iodine removal capability of the containment spray reduces the release of fission product radioactivity from containment to the environment, in the event of a DBA, to within limits. The Containment Spray and Containment Cooling systems are designed to meet the requirements of Atomic Energy Commission's 1967 General Design Criteria (GDC) 37, "Engineered Safety Features Basis for Design"; GDC 49, "Containment Design Basis"; GDC 52, "Containment Heat Removal Systems"; GDC 58, "Inspection of Containment Pressure-Reducing Systems"; GDC 59, "Testing of Containment Pressure-Reducing Systems Components"; GDC 60, "Testing of Containment Spray Systems"; GDC 61, "Testing of Operational Sequence of Containment Pressure-Reducing Systems"; GDC 62, "Inspection of Air Cleanup Systems"; GDC 63, "Testing of Air Cleanup Systems Components"; GDC 64, "Testing Air Cleanup Systems"; and GDC 65, "Testing of Operational Sequence of Air Cleanup Systems."

As discussed in FSAR Appendix 3.1A, the designs of these systems conform to the intent of 10 CFR 50, Appendix A, GDCs 38, "Containment Heat Removal"; GDC 39, "Inspection of Containment Heat Removal Systems"; GDC 40, "Testing of Containment Heat Removal Systems"; GDC 41, "Containment Atmosphere Cleanup"; GDC 42, "Inspection of Containment Atmosphere Cleanup Systems"; and GDC 43, "Testing of Containment Atmosphere Cleanup Systems."

The proposed change in the TS CT does not adversely affect the conformance of the CS and CFCU systems to the regulatory requirements described above.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security, or to the health and safety of the public.

7.0 ENVIRONMENTAL CONSIDERATION

PG&E has evaluated the proposed amendment and has determined that the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types, or significant increase in the amounts, of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

Proposed Technical Specification Page (Mark-up)

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray and Cooling Systems

LCO 3.6.6 The containment fan cooling unit (CFCU) system and two containment spray trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	72 hours <u>AND</u> 10 days from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1 <u>AND</u> B.2 **----------NOTE----------- The Condition A Completion Times may be extended to 14 days for Unit 2 cycle 12 for containment spray pump 2-2 control circuit cable maintenance. ------------------------------**	6 hours 84 hours
C. One required CFCU system inoperable such that a minimum of two CFCUs remain OPERABLE.	C.1	7 days <u>AND</u> 10 days from discovery of failure to meet the LCO
D. One required containment spray train inoperable and one required CFCU system inoperable such that a minimum of two CFCUs remain OPERABLE.	D.1 Restore one required containment spray system to OPERABLE status, <u>OR</u> D.2 Restore one CFCU system to OPERABLE status such that four CFCUs or three CFCUs, each supplied by a different vital bus, are OPERABLE.	72 hours 72 hours

(continued)

Proposed Technical Specification Changes (Retyped)

Remove Page	Insert Pages
3.6.13	3.6.13 3.6.13a

3.6 CONTAINMENT SYSTEMS

3.6.6 Containment Spray and Cooling Systems

LCO 3.6.6 The containment fan cooling unit (CFCU) system and two containment spray trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One containment spray train inoperable.	A.1 Restore containment spray train to OPERABLE status.	---------NOTE------------ The Condition A Completion Times may be extended to 14 days for Unit 2 cycle 12 for containment spray pump 2-2 control circuit cable maintenance. --------------------------- 72 hours <u>AND</u> 10 days from discovery of failure to meet the LCO
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 84 hours
C. One required CFCU system inoperable such that a minimum of two CFCUs remain OPERABLE.	C.1 Restore required CFCU system to OPERABLE status.	7 days <u>AND</u> 10 days from discovery of failure to meet the LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. One required containment spray train inoperable and one required CFCU system inoperable such that a minimum of two CFCUs remain OPERABLE.	D.1	Restore one required containment spray system to OPERABLE status,	72 hours
	OR		
	D.2	Restore one CFCU system to OPERABLE status such that four CFCUs or three CFCUs, each supplied by a different vital bus, are OPERABLE.	72 hours

(continued)

TS Bases Mark-up (For Information Only)

BASES (continued)

ACTIONS

A.1

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE spray and cooling trains are adequate to perform the iodine removal and containment cooling functions. The 72 hour Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs, and low probability of a DBA occurring during this period.

The 10 day portion of the Completion Time for Required Action A.1 is based upon engineering judgment. It takes into account the low probability of coincident entry into two Conditions in this Specification coupled with the low probability of an accident occurring during this time. Refer to Section 1.3, "Completion Times," for a more detailed discussion of the purpose of the "from discovery of failure to meet the LCO" portion of the Completion Time.

The Completion Time is modified by a Note that allows the Condition A Completion Times to be extended to 14 days for Unit 2 during cycle 12 for containment spray pump 2-2 control circuit cable maintenance. The 14 day Completion Time only applies to Unit 2 during cycle 12 and may only be used to support maintenance of the containment spray pump 2-2 control circuit cable. The 14 day Completion Times do not apply to Condition C and do not extend the Condition C Completion Time of 10 days from discovery of failure to meet the LCO. In the event Condition A is entered for greater than or equal to 10 days, and then Condition C is entered, the Condition C Completion Time must be considered not met.

B.1 and B.2

If the inoperable containment spray train cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 84 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach MODE 5 allows additional time for attempting restoration of the containment spray train and is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in MODE 3.

C.1

With one CFCU system inoperable such that a minimum of two CFCUs remain operable, restore the required CFCUs to OPERABLE status within 7 days. The components in this degraded condition are capable of providing at least 100% of the heat removal needs. The 7 day