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PG&E Letter HIL-05-011

ATTN: Document Control Desk
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Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Docket No. 72-27
Humboldt Bay Independent Spent Fuel Storage Installation
Response to NRC Request for Comments Pertaining to the Preliminary License and Safety Evaluation Report for the Humboldt Bay Independent Spent Fuel Storage Installation (TAC No. L23683)

Dear Commissioners and Staff:

By Pacific Gas and Electric Company (PG&E) Letter HIL-03-001, dated December 15, 2003, as supplemented, PG&E submitted an application to the U.S. Nuclear Regulatory Commission (NRC), for a 10 CFR 72 site-specific license to build and operate an Independent Spent Fuel Storage Installation at the Humboldt Bay Power Plant (HBPP) site to store the HBPP Unit 3 spent nuclear fuel. The application included a Safety Analysis Report, Environmental Report, and other required documents in accordance with 10 CFR 72.

By letter dated August 24, 2005, the NRC staff provided a preliminary License and Safety Evaluation Report (SER) to PG&E pursuant to the requirements of 10 CFR 72 and requested PG&E's review and identification of any inaccuracies and/or omissions.

This response provides the results of PG&E's review. The enclosure contains references to the preliminary License and SER, the related inaccuracy or omission, and a reference to related docketed information.

If you have any questions regarding this letter, please contact Mr. Terence Grebel at (805) 545-4160.

Sincerely,

David H. Oatley

NMSS 01

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Enclosure
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Number	Comment/Inaccuracy	Technical Reference
Global item noted in Chapters 1 and 5 of the SER	There are many references to ASME Section III 2001 edition in the SER. The Code edition of record for the design and construction is 1995 with 1996 and 1997 addenda.	ISFSI SAR 4.2.3.3 and Table 3.4-2. Note that SER 4.1.3.2 references the correct Code.
SER 5.1.1.2, page 5-2, 2nd sentence, 2nd paragraph	The SER states, in part: "the MPC confinement boundary is designed in accordance with ASME Section III, Subsection NG, Articles NG-3200 and NG-3300." The referenced SAR section indicates that the confinement boundary is designed to NB and the fuel basket is designed per NG.	ISFSI SAR 4.2.3.3
SER 5.1.1.3, page 5-3, 3rd sentence, 2nd paragraph	The SER states, in part: "Material procurement is in accordance with ASME Boiler and Pressure Vessel Code, Section II (ASME International, 2001d–f) and Section III, Subsection NG, Article NG-2000 (ASME International, 2001a)." Since this paragraph is discussing the MPC, and not just the fuel basket, the reference should also include ASME Section III, Subsection NB, NB-2000.	ISFSI SAR 4.2.3.3
SER 5.1.4.1, Page 5-9 SER 5.1.4.3, Page 5-14	The SER description of the upper fuel spacers is shown as W14x13 beams. They are W4x13 beams.	ISFSI SAR Figure 3.3-1
SER 5.1.4.3, Page 5-14	The SER states the following: "The inner and outer cylindrical shells, base plate, and lid are constructed from SA516 Grade 70 carbon steel." The inner shell is made of SA203E.	ISFSI SAR Figure 3.3-3 HI-STAR FSAR Table 2.2.6

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SER 8.1.1.2, Page 8-2, 2nd paragraph	The SER statement regarding "up to 24 damaged fuel assemblies/fuel debris may be stored in DFCs in the peripheral cells..." should be changed to "up to 28 damaged assemblies/fuel debris...".	ISFSI SAR Table 10.2-1 ISFSI TS Table 2.1-1
SER 8.1.1.2, Page 8-3	The SER states the following regarding criticality monitoring: "These features include a combination of installed and portable radiation monitoring instrumentation to detect conditions that may result in excessive radiation levels, which will trigger the initiation of appropriate safety actions. The radiation monitoring generally conforms to the guidance in Regulatory Guide 3.71 (U.S. Nuclear Regulatory Commission, 1998) and American National Standards Institute/American Nuclear Society (1997)." ISFSI SAR Section 4.2.3.3.7 states the following regarding criticality monitoring: "During cask loading and unloading activities in the RFB, criticality monitoring requirements of 10 CFR 72.124(c) will be met using a combination of installed and portable radiation monitoring instrumentation, in accordance with GDC-63 (to detect conditions that may result in excessive radiation levels and to initiate appropriate safety actions). The radiation monitoring instrumentation generally conforms to the guidance of RG 8.12, 'Criticality Accident Alarm Systems,' and ANSI/ANS 8.3-1979, 'Criticality Accident Alarm System.' HBPP has chosen to comply with 10 CFR 50.68(b) in lieu of 10 CFR 70.24, in part by the use of two area radiation monitors located at the +12 ft (south wall access door) and +27 ft (northwest access door) elevations in the refueling building. A high radiation	ISFSI SAR 4.2.3.3.7

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SER 8.1.1.2, Page 8-3 (Continued)	signal from either of these channels shall provide a 'Building Above Normal Radiation' signal which is annunciated in the control room. These two area monitoring channels shall also provide gamma monitoring of the fuel storage areas. A high radiation level signal from either of these channels shall sound the evacuation horns in the RFB." The SER statement conflicts with the SAR in two areas: (1) There is no mention of meeting 10 CFR 72.124c via compliance with 10 CFR 50.68(b), and (2) The reference to the 1997 edition imposes stricter requirements on radiation monitoring equipment than the earlier standard referenced in the SAR. The existing equipment would not meet the later standard.	
SER 9.1.1, page 9-1, 2nd paragraph	The SER makes reference to the 1998 edition to ASME Section III. The Code edition of record for the design and construction is 1995 with 1996 and 1997 addenda.	ISFSI SAR 4.2.3.3 and Table 3.4-2. Note that SER 4.1.3.2 references the correct Code.
SER 10.1.1.1, 10.1.1.3, 10.1.2, 10.1.2.1, 10.1.3.1, 10.1.3.2, 10.1.4.1, 10.1.4.2	SER Chapter 10 refers to the "HBPP QA Program." PG&E proposes that the NRC use the term "HB ISFSI QA Program described in Chapter 11 of the SAR" to eliminate any confusion that could exist between the SAFSTOR QA Plan and the QA Program that the NRC approved (in SER Chapter 12). All occurrences of "HBPP QA Program" should be changed to read: "HB ISFSI QA Program described in Chapter 11 of the SAR." This change will	ISFSI SAR 11

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SER 10.1.1.1, 10.1.1.3, 10.1.2, 10.1.2.1, 10.1.3.1, 10.1.3.2, 10.1.4.1, 10.1.4.2 (Continued)	bring consistency among the SAR, SER, and License Condition 14.	
SER 10.1.5, Page 10-12	The SER states the following: "Section 9.5 of the SAR identifies that the existing emergency plan (EP) for the HBPP, required by 10 CFR Part 50, will be revised to incorporate the Humboldt Bay ISFSI and to meet the regulatory requirements in 10 CFR 72.32(a)." SAR Section 9.5 states the following: "Attachment B to the Independent Spent Fuel Storage Installation (ISFSI) Licensing Application contains the Humboldt Bay ISFSI Emergency Plan that complies with the provisions of 10 CFR 72.32(a)."	ISFSI SAR 9.5 HB ISFSI License Application, Attachment B
SER 14.1.2, Page 14-2	The SER states the following: "During fuel loading, existing SFP instrumentation will monitor for any releases of airborne radioactivity. These monitors are designed to automatically change the building ventilation exhaust system from normal to emergency mode upon detection of radiation levels above preset alarm levels. During fuel loading and closure of the MPC-HB, potentially contaminated air will be collected and processed through the gaseous radioactive waste system. This contaminated vented gas will be redirected and processed using existing plant facilities and procedures subject to the requirements of the HBPP 10 CFR Part 50 license."	Humboldt Bay Power Plant Unit 3 License Amendment Request 04-02, Spent Fuel Cask Handling PG&E Letter HBL-04-016, July 9, 2004

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SER 14.1.2, Page 14-2 (Continued)	There is no automatic change in the building ventilation system. Placing the building in isolation mode is a manual action. HBPP LAR 04-02, Section 4.3.1(2), Radiological Considerations, 2nd paragraph, states the following: "Although it is PG&E's intention to perform fuel handling activities with the RFB ventilation in operation, PG&E calculated radiological dose consequences due to a heavy load drop resulting in a ground-based release assuming that the RFB ventilation system was inoperable (Reference 7.17 [Ground Release Dose Consequence, PG&E Calculation N-260, Rev. 0, February 2000]). Should a situation arise during cask handling that results in the SFP system being inoperable, the cask will be moved to a safe configuration and further cask handling activities will be ceased until the SFP ventilation can to restored to operability. Based on a conservative assumption of complete fuel damage to all 390 fuel assemblies, the resulting offsite dose consequences is a whole body dose at the site boundary (100 meters) of approximately 73.2 mrem. Since Unit 3 has been shutdown for more than 23 years, most of the iodine isotopes have decayed away except for a small trace of I-129 (9.4×10^{-3} curies in 1984), no measurable thyroid dose will be expected. The dose calculation is based on the assumption that 100 percent of the Kr-85 inventory will be released to the environment. The atmospheric dispersion factor (X/Q) for incidental releases is 1.44×10^{-2} based on the atmospheric dispersion models of	

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SER 14.1.2, Page 14-2 (Continued)	Regulatory Guide 1.145. These dose consequences are slightly higher than the previous value of 5.1 mrem using the 50 ft stack, but are still a small fraction of 10 CFR 100 and are therefore acceptable. "	
SER 15.1.2.2, Page 15-10	The SER states: "The lid is approximately 55 cm [22 in] thick (SAR Figure 3.2-1)." SAR Section 4.2.2.6 states: "The lids are approximately 16-1/4 inches high, not including the height of the lid bolt caps."	ISFSI SAR 4.2.2.6
SER 15.1.2.5, Gasoline Tanker Truck and Gasoline Storage Tank section, Page 15-16, 2nd paragraph	The SER statement regarding "restricted area" should be changed to "owner controlled area."	ISFSI SAR 8.2.6.2.4
SER 15.1.2.5, Page 15-28, Natural Gas Pipeline Section Also pages 15-20 15-25 15-30	The SER statement regarding the purging of the natural gas line should be revised since the gas line will only be depressurized. The referenced SAR section indicates the following, "The gas distribution line shall be verified to be isolated at the regulating station and depressurized."	ISFSI SAR 8.2.6.2.2

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TS Page 2.0-2, Table 2.1-1	Additional note 4 is required: NOTE 4: Storage of DAMAGED FUEL in the form of fuel debris that consists of zirconium clad pellets, stainless steel clad pellets, or unclad pellets up to a maximum of one equivalent fuel assembly is allowed.	In PG&E Letter HIL-05-03, for RAI question 3-1, PG&E committed to revise SAR Section 3.1 on material to be stored. Specifically, PG&E addressed storage of stainless clad fuel debris. PG&E did not make any proposed changes to the TS at that time, and is now proposing the above note be included in the TS.
TS Page 3.1-2, SR 3.1.1.3	Revise acceptance criteria to be "Verify that the total helium leak rate through the MPC-HB vent and drain port cover plate welds is less than or equal to 1.0E-7 atm-cc/sec (He)."	The acceptance criterion of $1x10^{-7}$ atm-cc/sec is considered leak tight per ANSI N14.5
TS Page 5.0-1, TS 5.1.2.b	Revise to read: "This program will provide limits on surface contamination of the OVERPACK and GTCC cask and verification of meeting those limits prior to removal of a loaded OVERPACK or GTCC cask from the refueling building."	PG&E's response to NRC Question 7-2 in PG&E Letter HIL-05-003.