July 7, 2014

Rebecca Clark, Director
Division of Assessment and Remediation
Office of Superfund Remediation
and Technology Innovation
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code: 5204P
Washington, DC 20460

SUBJECT: CONSULTATION ON THE DECOMMISSIONING OF THE HUMBOLDT BAY POWER PLANT, UNIT 3, IN EUREKA, CALIFORNIA

Dear Ms. Clark:

This letter notifies you of the decommissioning oversight actions that the U.S. Nuclear Regulatory Commission (NRC) has taken and intends to take, for the Humboldt Bay Power Plant (HBPP), Unit 3, in Eureka, California.

On October 9, 2002, the NRC and the U.S. Environmental Protection Agency (EPA) entered into a Memorandum of Understanding (MOU) on "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites." Under the MOU, EPA agreed to continue its deferral policy of not listing sites on the Comprehensive Environmental Response, Compensation, and Liability Act's National Priorities List that are subject to NRC's licensing authority. The MOU provides that, unless an NRC-licensed site exceeds any of three trigger criteria contained in the MOU, EPA agrees to a policy of deferral to NRC decision-making on decommissioning without the need for consultation.

For sites that trigger the criteria in the MOU, NRC will consult with EPA at two points in the decommissioning process: (1) prior to NRC approval of the license termination plan (LTP) or decommissioning plan, which the NRC terms Level 1 consultation; and (2) following completion of the Final Status Survey (FSS), which the NRC terms Level 2 consultation.

We are sending this letter as our Level 1 consultation for the Humboldt Bay site, because the licensee's proposed derived concentration guideline levels (DCGLs) for certain radionuclides for this site exceed the soil concentration values in Table 1 of the MOU.

HBPP is located about four miles southwest of the city of Eureka, Humboldt County, California and consists of 143 acres of land. On July 2, 1976, Unit 3, which is the NRC licensed power reactor at the site, was shut down for annual refueling and to conduct seismic modifications. In 1983, updated economic analyses indicated that restarting Unit 3 would probably not be cost-effective, and in June 1983, Pacific Gas and Electric Company (PG&E) announced its intention to decommission the unit. On December 15, 2003, PG&E submitted a license application in accordance with 10 CFR Part 72 to the NRC to construct and operate an Independent Spent Fuel Storage Installation (ISFSI) on the HBPP site. On November 17, 2005, the NRC issued a

site-specific license to PG&E for an ISFSI at the HBPP site. The transfer of spent fuel from the fuel storage pool to the dry storage casks of the ISFSI was completed in December 2008. Unit 3 decommissioning commenced in May 2009. Following the start of a new power generation facility in 2010, the licensee commenced with the permanent shutdown of the fossil Units 1 and 2. Units 1 and 2 are being decommissioned in conjunction with Unit 3 decommissioning. In May 2013, PG&E submitted its LTP.

PG&E is proposing to decontaminate the Humboldt Bay site to meet the requirements for unrestricted use under 10 CFR 20.1402. The expected future land use is industrial because a new power generation facility was built adjacent to the former nuclear generating station and the ISFSI remains on the site. The licensee, however, has chosen to use a more conservative land use of a resident farmer to calculate DCGLs to bound any potential uses that may occur after the new power generation facility is closed (post 2040). As the expected future land use is industrial for several decades, the NRC has compared the licensee's DCGLs to the MOU's soil concentration levels for the industrial use scenario for the purposes of evaluating the need for consultation. Reliance upon the industrial use scenario is consistent with the instructions for Table 1, "Consultation Triggers for Residential and Commercial/Industrial Soil Contamination," in the MOU, which state that the users of this table should select the appropriate column (i.e., land use scenario) based on the site's reasonably anticipated land use.

The DCGLs, which the staff anticipates approving, are provided in the enclosure. Four of the twenty two radionuclides currently exceed the MOU soil concentration levels for the industrial land use scenario. Prior to the NRC's termination of the license, the licensee must show that the Humboldt Bay site will be in compliance with the NRC's criteria in 10 CFR 20.1402. The criteria in 10 CFR 20.1402 provide that the licensee must demonstrate (e.g., through the FSS) that the residual radioactivity that is distinguishable from background radiation results in an all-pathways total effective dose equivalent to an average member of the critical group that does not exceed 0.25 millisieverts per year (25 millirem per year). In addition, the 10 CFR 20.1402 criteria require that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). The dose criteria in 10 CFR 20.1402 are fully protective of the public health and safety, and were the result of a comprehensive rulemaking (62 FR 39058; July 21, 1997), including an accompanying generic environmental impact statement.

Individuals at a decommissioned site are expected to receive doses substantially below the constraint level because of the application of the ALARA principle, conservative dose modeling assumptions, and the nature of the cleanup process itself, which often reduces residual contamination levels significantly below site DCGLs. Additionally, the residual radioactivity at the site is expected to be much lower than the approved DCGL values because meeting the "not to exceed 25 millirem per year" criteria must be demonstrated using an all pathways, sum of the fractions approach. The DCGLs in the LTP represent the maximum levels for each radionuclide without considering the existence of other radionuclides. Thus, in applying the sum of the fraction requirement, the actual cleanup values will be reduced to ensure that the potential dose from all residual radioactivity at the site from all media is less than 25 millirem per year.

On site monitoring wells have been sampled as part of an ongoing groundwater monitoring program since 1984. There have been sample results in 2009 and 2010 where the concentrations of Gross Alpha and Gross Beta in some groundwater monitoring wells have exceeded the EPA Maximum Contaminant Level (MCL) for that radionuclide. However, the

saline groundwater makes the analyses for gross alpha and gross beta less effective and the results reported are not representative of the actual groundwater conditions. In addition, there is no waterborne pathway as the groundwater is saline and is not used now, nor likely to be used in the future, for either direct consumption or for agricultural purposes. Therefore, the NRC is not requesting a consultation on groundwater.

As part of the LTP review and approval process, the NRC staff will prepare an environmental assessment (EA) to document how the remediation at the Humboldt Bay site would ensure protection of the public health and safety and the environment. The EA will be published in the *Federal Register*.

Following your staff's review of Enclosure 1 and other relevant information, as specified in Section V.D.1 of the MOU, please send us your views on the Humboldt Bay site within 90 days of receiving this notification.

The staff anticipates approving the LTP at the conclusion of the consultation process. Following site remediation activities, the licensee will submit a FSS. The NRC staff will review information contained in this survey report and will compare the remaining levels of residual radioactivity to the MOU trigger levels. If the FSS measurements show that the remaining radionuclide concentrations are below the values set forth in Table 1 of the MOU, then the NRC will proceed to terminate the HBPP, Unit 3 license and the site will be released for unrestricted use. The NRC will inform the EPA of such findings. If the FSS measurements show that any of the remaining radionuclide concentrations are above the values set forth in Table 1 of the MOU, then the NRC will engage in Level 2 consultation with the EPA to identify and resolve any remaining issues. In the meantime, if you have any questions regarding this letter or the remediation activities at the Humboldt Bay site please contact Mr. Andrew Persinko, Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate, at (301) 415-7479.

Sincerely,

/RA/
Larry W. Camper, Director
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 50-133
License No.: DPR-7

Enclosure:
Humboldt Bay Proposed Cleanup Values

cc: Humboldt Bay Service List

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Humboldt Bay Proposed Cleanup Values
cc: Humboldt Bay Service List

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DATE	5 / 28 / 2014	5 / 20 / 2014	5 / 21 / 2014	5 / 27 / 2014	5 / 28 / 2014
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NAME	KConway	BJones	APersinko	LCamper	
DATE	5 / 28 / 2014	7 / 2 / 2014	7/ 2 / 2014	7/ 7 / 2014	

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Humboldt Bay Power Plant
Proposed Soil Cleanup Values (DCGLs) (pCi/g)

Radionuclide	Cleanup Value (DCGL)	EPA MOU*
Am-241	2.58E+01	5.68E+02
C-14	6.30E+00	1.23E+05
Cm-243	2.90E+01	6.70E+01
Cm-244	4.81E+01	NA
Cm-245	1.78E+01	NA
Cm-246	2.58E+01	NA
Co-60	3.82E+00	6.00E+00
Cs-137	7.93E+00	1.10E+01
Eu-152	**1.01E+01**	**7.00E+00**
Eu-154	**9.40E+00**	**8.00E+00**
H-3	**6.86E+02**	**4.23E+02**
Nb-94	**7.13E+00**	**3.00E+00**
Ni-59	1.97E+03	1.23E+06
Ni-63	7.24E+02	5.55E+05
Np-237	1.11E+00	NA
Pu-238	2.97E+01	1.64E+03
Pu-239	2.67E+01	1.43E+03
Pu-240	2.67E+01	NA
Pu-241	8.61E+02	1.72E+05
Sr-90	1.51E+00	1.07E+03
Tc-99	1.24E+01	8.94E+04

* Industrial / Commercial