



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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June 11, 2018

Mr. Edward D. Halpin  
Senior Vice President and  
Chief Nuclear Officer  
Pacific Gas and Electric Company  
P.O. Box 56  
Mail Code 104/6  
Avila Beach, CA 93424

SUBJECT: HUMBOLDT BAY POWER PLANT, UNIT 3 - APPROVAL OF FINAL STATUS  
SURVEY REPORTS NGFA-EST AND NGFA-WST

Dear Mr. Halpin:

By letter dated March 9, 2017, Pacific Gas and Electric Company (PG&E) submitted final status survey reports (FSSRs) for the New Generation Footprint Area, East and West portions (NGFA-EST and NGFA-WST) (ADAMS Accession Number ML17068A100). In January 2009, the NRC's contractor, Oak Ridge Institute for Science and Education, conducted confirmatory surveys of the New Generation Footprint Area. The results of those confirmatory surveys were documented in a report dated November 19, 2009 (ML100070117).

The staff has reviewed your FSSRs for NGFA-EST and NGFA-WST, and the results presented are all a fraction of the DCGL. The gamma walkover scanning coverage described in the report was adequate, and it exceeded the coverage recommended by NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual" (MARSSIM). PG&E also indicates that no investigation levels for scan or soil measurements were triggered during the surveys. Based on the PG&E and NRC confirmatory survey results, survey units NGFA-EST and NGFA-WST are acceptable to release for unrestricted use.

There were some areas where improvements should be considered for future surveys, and several NRC staff observations are provided as follows.

As noted in the FSSRs and in previous NRC confirmatory reports, the licensee's characterization contractor did not follow conventional MARSSIM guidance as areas were cleared, and Final Status Survey (FSS) was performed over a mix of backfill and original site materials. NRC staff notes that while the FSS results provided in the licensee's report do not indicate that a more restrictive classification than Class 3 is warranted, it is important for the licensee to consider that characterization and in-process survey results during remediation should be used to document the extent of contamination in excavated soil or commodities (as these results could potentially indicate that a more restrictive classification is warranted). While there may have been surveys performed prior to backfill of remediated areas, the documentation remains limited. It is worth noting that the licensee's FSS report provides results from several subsurface sampling surveys, which provide some additional assurance that contamination has not been left at depth. In the future, the licensee should ensure that all surveys are adequately documented and that FSS surveys are completed prior to backfilling excavations.

It appears that hard-to-detect (HTD) radionuclides were only minimally addressed in the FSSRs, and they did not appear to be considered during the FSS. NRC staff notes that HTDs were addressed in previous characterization reports, but that the licensee should plan to address HTDs as appropriate in future FSSs. Additionally, the FSSR focuses on results only from Cs-137, while presenting both Cs-137 and Co-60 as "radionuclides of concern." The NRC staff notes that a statement is made in the FSSRs that "Cs-137 was considered the only gamma emitting radionuclide reported in concentrations with the potential for exceeding the screening criteria." However, Class 3 areas should consider that radionuclides of concern may be present at a fraction of the DCGL, and surveys should be planned accordingly. The NRC staff also notes that a previously submitted characterization report (Humboldt Bay Power Plant, New Generation Footprint Area Radiological Characterization Report, HBPP-RPT-002, Revision 0, ML101400089) indicates that all measurements taken during that campaign were below the Minimum Detectable Concentration (MDC) for Co-60. In the future, the licensee should ensure that all radionuclides of concern, and the rationale for not considering certain radionuclides during FSS, are clearly documented in FSSRs.

The licensee's FSSR indicates that "the calculated scan MDCs for Cs-137 and Co-60 are 23.2 and 11.2 pCi/g, respectively," which are greater than the respective DCGLs. NRC staff notes that MARSSIM Section 6.2.2.6 indicates that "scanning and direct measurement techniques should be capable of measuring levels below the established DCGLs - detection limits of 10-50% of the DCGL should be the target." Additionally, the NRC staff notes that the licensee's License Termination Plan (LTP) (ML18066A137) provides a discussion of scan detection capabilities significantly lower than those provided in the FSS report. As such, the licensee should ensure that scan MDCs for future surveys are consistent with MARSSIM guidance and with the LTP.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions regarding this action, please contact me at 301-415-3017 or via e-mail at [John.Hickman@nrc.gov](mailto:John.Hickman@nrc.gov).

Sincerely,

*/RA/*

John B. Hickman, Project Manager  
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Division of Decommissioning, Uranium Recovery  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 50-133

cc w/Enclosures:  
Humboldt Bay Service List

E. Halpin

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SUBJECT: HUMBOLDT BAY POWER PLANT, UNIT 3 - APPROVAL OF FINAL STATUS  
SURVEY REPORTS NGFA-EST AND NGFA-WST, DATED JUNE 11, 2018

Docket No. 50-133

cc w/enclosures:  
Humboldt Bay Service List

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