

NUCLEAR REGULATORY COMMISSION

Docket No. 50-133

Pacific Gas and Electric Company

Humboldt Bay Power Plant Unit No. 3

Exemption

I. Background.

The Humboldt Bay Power Plant, Unit 3 (HBPP 3) facility is a decommissioning power reactor located in Humboldt County, California. Pacific Gas and Electric Company (PG&E) is the holder of HBPP 3 Facility Operating License No. DPR-7. On July 2, 1976, HBPP 3 was shut down for annual refueling and to conduct seismic modifications. In 1983, updated economic analyses indicated that restarting HBPP 3 probably would not be cost-effective, and on June 27, 1983, PG&E announced its intention to decommission the unit. In 1984, PG&E submitted the HBPP 3 SAFSTOR [Safe Storage] Decommissioning Plan in support of the application to amend the HBPP 3 operating license to a possession-only license. On July 16, 1985, the NRC issued Amendment No. 19 to the HBPP Unit 3 Operating License (Agencywide Documents Access and Management System (ADAMS) Legacy No. 507260040) to change the status to possess-but-not-operate, and the plant was placed into a SAFSTOR status. On December 11, 2008, PG&E completed the transfer of spent nuclear fuel (SNF) from the HBPP 3 spent fuel pool (SFP) into the Humboldt Bay Independent Spent Fuel Storage Installation (HB ISFSI). All Greater-Than-Class-C (GTCC) waste was transferred to the HB ISFSI in 2013. PG&E began decontamination and dismantlement of HBPP 3 in June 2009, and currently plans to terminate the 10 CFR Part 50 license in 2021.

II. Request/Action.

Pursuant to 10 CFR 50.12, "Specific exemptions," PG&E has requested an exemption from 10 CFR 50.54(w)(1) by letter dated January 13, 2020 (ADAMS Accession No. ML20013G734). The exemption from the requirements of 10 CFR 50.54(w)(1) would permit PG&E to reduce its onsite property damage insurance from \$63.16 million to \$50 million.

The regulation in 10 CFR 50.54(w)(1) requires each licensee to have and maintain onsite property damage insurance to stabilize and decontaminate the reactor and reactor site in the event of an accident. The onsite insurance coverage must be either \$1.06 billion or whatever amount of insurance is generally available from private sources (whichever is less). The HBPP 3 site currently maintains \$63.16 million in onsite insurance coverage in accordance with a previous exemption approved by the NRC on August 22, 1989 (54 FR 35738).

The licensee stated that the HBPP 3 reactor has been removed and all SNF and GTCC waste is stored in the onsite ISFSI. In addition, plant structures associated with reactor operations have been removed from the site. This results in a significant reduction in the potential for and severity of onsite property damage because, with the HBPP 3 reactor removed, there are no events that would require the stabilization of reactor conditions after an accident. Similarly, the risk of an accident that would result in significant onsite contamination at the HBPP 3 site is also much lower than the risk of such an event at an operating reactor. Therefore, PG&E requested an exemption from 10 CFR 50.54(w)(1) that would permit a reduction in its onsite property damage insurance from \$63.16 million to \$50 million, commensurate with the reduced risk of an accident at the decommissioned HBPP 3 reactor.

III. Discussion

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR part 50 when 1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and 2) any of the special circumstances listed in 10 CFR 50.12(a)(2) are present.

The financial protection limits of 10 CFR 50.54(w)(1) were established after the Three Mile Island accident out of concern that licensees may be unable to financially cover onsite cleanup costs in the event of a major nuclear accident. The specified coverage requirement was developed based on an analysis of an accident at a nuclear reactor operating at power, resulting in a large fission product release and requiring significant resource expenditures to stabilize the reactor conditions and ultimately decontaminate and clean up the site.

The NRC developed these cost estimates from the spectrum of postulated accidents for an operating nuclear reactor and the consequences of any associated release of radioactive material from the reactor. Although the risk of an accident at an operating reactor is very low, the consequences can be large. In an operating plant, the high temperature and pressure of the reactor coolant system, as well as the inventory of relatively short-lived radionuclides, contribute to both the risk and consequences of an accident. With the decommissioning of the reactor at HBPP 3, and the movement of all the irradiated fuel assemblies into storage at the onsite ISFSI, such accidents are no longer possible. The reactor, reactor coolant system, and supporting systems have already been dismantled and removed from the site as part of the decommissioning process. Therefore, these systems and components no longer serve any function related to the storage of irradiated fuel. As such, postulated accidents involving failure

or malfunction of the reactor, reactor coolant system, or supporting systems are no longer applicable at HBPP 3.

During reactor decommissioning, the principal radiological risks are associated with the storage of spent fuel onsite, as well as the inventory of radioactive liquids, activated reactor components, and contaminated materials. In its January 13, 2020, exemption request, PG&E noted that all SNF and GTCC waste is stored at the HB ISFSI. Plant structures have been removed, and the site, including the remaining buildings, has been remediated for radioactive material. The licensee determined that the minimal radioactive material remaining at the site that resulted from HBPP 3's operation is insufficient for any potential event to result in exceeding dose limits or otherwise involving a significant adverse effect on public health and safety.

Specifically, there are no credible events at HBPP 3 that could result in a radiological release exceeding the limits established by the U.S. Environmental Protection Agency's (EPA's) early-phase Protective Action Guidelines (PAGs) of one roentgen equivalent man at the exclusion area boundary, which demonstrates that any possible radiological releases would be minimal and would not require precautionary protective actions (e.g., sheltering in place or evacuation). The staff evaluated the radiological consequences associated with credible accident events at HBPP 3, in consideration of the permanently shutdown and decommissioned status of the facility. The possible accident scenarios at HBPP 3 have greatly reduced radiological consequences. Based on its review, the staff concluded that no reasonably conceivable radiological release event exists that could cause an offsite release greater than the EPA PAGs.

In addition, given that all of the irradiated fuel assemblies at HBPP 3 have already been moved into storage at the onsite ISFSI, the fuel is no longer thermal-hydraulically capable of sustaining a zirconium fire and can be air-cooled in all

credible accident scenarios and fuel configurations. Since NRC approval of the previous exemption in 1989, which permitted HBPP 3 to reduce its onsite insurance coverage to \$63.16 million, the NRC staff has authorized a lesser amount of onsite property damage insurance coverage based on an analysis of the zirconium fire risk. In SECY-96-256, "Changes to Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors, 10 CFR 50.54(w)(1) and 10 CFR 140.11," dated December 17, 1996 (ADAMS Accession No. ML15062A483), the NRC staff recommended changes to the power reactor insurance regulations that would allow licensees to lower onsite insurance levels to \$50 million upon demonstration that the fuel stored in the spent fuel pool can be air-cooled.

In its Staff Requirements Memorandum to SECY-96-256, dated January 28, 1997 (ADAMS Accession No. ML15062A454), the Commission supported the staff's recommendation that, among other things, would allow permanently shutdown power reactor licensees to reduce commercial onsite property damage insurance coverage to \$50 million when the licensee was able to demonstrate the technical criterion that the spent fuel could be air-cooled if the spent fuel pool was drained of water. The staff has used this technical criterion to grant similar exemptions to other decommissioning reactors (e.g., Fort Calhoun Station, published in the *Federal Register* on April 6, 2018 (83 FR 14898); and La Crosse Boiling Water Reactor, published in the *Federal Register* on August 1, 2018 (83 FR 37532)). These prior exemptions were based on the licensees demonstrating that the spent fuel could be air-cooled, consistent with the technical criterion discussed above. Based on this criterion, the NRC staff determined \$50 million to be an adequate level of onsite property damage insurance coverage for the HBPP 3 site, given that the spent fuel is no longer susceptible to a zirconium fire.

In addition, the staff has postulated that there is still a potential for other radiological incidents at a decommissioning reactor that could result in significant onsite contamination besides a zirconium fire. In SECY-96-256, the NRC staff cited the rupture of a large contaminated liquid storage tank, causing soil contamination and potential groundwater contamination, as the most costly postulated event to decontaminate and remediate (other than a zirconium fire). The postulated large liquid radiological waste storage tank rupture event was determined to have a bounding onsite cleanup cost of approximately \$50 million. However, decommissioning activities at HBPP 3 have progressed to such an extent that there are no longer any large radiological waste storage tanks onsite. The staff concludes that there are no radioactive material sources that could be released from the HBPP 3 site that would challenge the assumptions made in SECY-96-256 regarding the rupture of a large contaminated liquid storage tank. Therefore, the staff determined that the licensee's proposal to reduce onsite insurance to a level of \$50 million would be consistent with the bounding cleanup and decontamination cost, as discussed in SECY-96-256.

A. The Exemption is Authorized by Law

The regulation in 10 CFR 50.54(w)(1) requires each licensee to have and maintain onsite property damage insurance of either \$1.06 billion or whatever amount of insurance is generally available from private sources, whichever is less. In accordance with 10 CFR 50.12, the Commission may grant exemptions from the regulations in 10 CFR part 50, as the Commission determines are authorized by law.

In 1989, the Commission granted HBPP 3 an exemption from 10 CFR 50.54(w)(1), permitting the reduction of onsite insurance coverage from \$100 million to \$63.16 million. As explained above, the NRC staff has determined that the licensee's proposed reduction in onsite property damage insurance coverage to a

level of \$50 million is consistent with SECY-96-256 because there is no credible risk of a zirconium fire with all irradiated fuel stored in the onsite ISFSI, where it is air-cooled in all accident scenarios.

The NRC staff has determined that granting of the licensee's proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, or other laws. Therefore, based on its review of PG&E's exemption request, as discussed above, and consistent with SECY-96-256, the NRC staff concludes that the exemption is authorized by law.

B. The Exemption Presents No Undue Risk to Public Health and Safety

The onsite property damage insurance requirements of 10 CFR 50.54(w)(1) were established to provide financial assurance that following a significant nuclear accident, onsite reactor conditions could be stabilized and the site decontaminated. The existing level of onsite insurance coverage for HBPP 3 is predicated on the assumption that the reactor is permanently shutdown and defueled and the site is being actively decommissioned with significant residual activity remaining. However, the fully decommissioned status of the facility has resulted in a significant reduction in the number and severity of potential accidents, and correspondingly, a significant reduction in the potential for and severity of onsite property damage. The proposed reduction in the amount of onsite insurance coverage does not impact the probability or consequences of potential accidents. The proposed level of insurance coverage is commensurate with the reduced consequences of credible nuclear accidents at HBPP 3. Therefore, the NRC staff concludes that granting the requested exemption will not present an undue risk to the health and safety of the public.

C. The Exemption is Consistent with the Common Defense and Security

The proposed exemption would not eliminate any requirements associated with physical protection of the site and would not adversely affect PG&E's ability to physically secure the site or protect special nuclear material. Physical security measures at HBPP 3 are not affected by the requested exemption. Therefore, the proposed exemption is consistent with the common defense and security.

D. Special Circumstances

Under 10 CFR 50.12(a)(2)(ii), special circumstances are present if the application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The underlying purpose of 10 CFR 50.54(w)(1) is to provide reasonable assurance that adequate funds will be available to stabilize reactor conditions and cover onsite cleanup costs associated with site decontamination, following an accident that results in the release of a significant amount of radiological material.

Because HBPP 3 is permanently shutdown and defueled, with all irradiated fuel assemblies stored in the onsite ISFSI, and decommissioning complete, it is no longer possible for the radiological consequences of design-basis accidents or other credible events at HBPP 3 to exceed the limits of the EPA PAGs at the exclusion area boundary. Therefore, the staff concludes that the application of the current requirements in 10 CFR 50.54(w)(1), as exempted, for PG&E to maintain \$63.16 million in onsite insurance coverage is not necessary to achieve the underlying purpose of the rule for the permanently shutdown and defueled HBPP 3 facility.

Under 10 CFR 50.12(a)(2)(iii), special circumstances are present whenever compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated.

The NRC staff concludes that if the licensee was required to continue to maintain an onsite insurance level of \$63.16 million, the associated insurance premiums would be in excess of those necessary and commensurate with the radiological contamination risks posed by the site. In addition, such insurance levels would be significantly in excess of other decommissioning reactor facilities that have been granted similar exemptions by the NRC.

As such, the NRC staff finds that compliance with the existing requirement would result in an undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted and are significantly in excess of those incurred by others similarly situated. Therefore, the special circumstances required by 10 CFR 50.12(a)(2)(ii) and 10 CFR 50.12(a)(2)(iii) exist for the HBPP 3 facility.

E. Environmental Considerations

The NRC approval of an exemption to insurance or indemnity requirements belongs to a category of actions that the Commission, by rule or regulation, has declared to be a categorical exclusion, after first finding that the category of actions does not individually or cumulatively have a significant effect on the human environment. Specifically, the exemption is categorically excluded from further analysis under 10 CFR 51.22(c)(25).

Under 10 CFR 51.22(c)(25), granting of an exemption from the requirements of any regulation of chapter I to 10 CFR is a categorical exclusion provided that (i) there is no significant hazards consideration; (ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) there is no significant increase in individual or cumulative public or occupational radiation exposure; (iv) there is no significant construction impact; (v) there is no significant increase in the potential for or consequences from radiological accidents; and

(vi) the requirements from which an exemption is sought involve: surety, insurance, or indemnity requirements.

The Director, Division of Decommissioning, Uranium Recovery, and Waste Programs, Office of Nuclear Material Safety and Safeguards, has determined that approval of the exemption request involves no significant hazards consideration because reducing the licensee's onsite property damage insurance for HBPP 3 does not 1) involve a significant increase in the probability or consequences of an accident previously evaluated; or 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety. The exempted financial protection regulation is unrelated to the operation of HBPP 3. Accordingly, there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and no significant increase in individual or cumulative public or occupational radiation exposure.

The exempted regulation is not associated with construction, so there is no significant construction impact. The exempted regulation does not concern the source term (i.e., potential amount of radiation in an accident), nor mitigation. Therefore, there is no significant increase in the potential for, or consequences of, a radiological accident. In addition, there would be no significant impacts to biota, water resources, historic properties, cultural resources, or socioeconomic conditions in the region. The requirement for onsite property damage insurance involves surety, insurance, and indemnity matters. Therefore, pursuant to 10 CFR 51.22(b) and 10 CFR 51.22(c)(25), no environmental impact statement or environmental assessment need be prepared in connection with the approval of this exemption request.

IV. Conclusions.

Accordingly, the NRC has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants PG&E an exemption from the requirements of 10 CFR 50.54(w)(1) to permit the licensee to reduce its onsite property damage insurance coverage at the HBPP 3 facility to a level of \$50 million. The exemption is effective March 18, 2020.

Dated at Rockville, Maryland, this 18th day of March 2020.

For the Nuclear Regulatory Commission.

/RA/

Patricia Holahan, Director,
Division of Decommissioning, Uranium
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