

DEC 13 1993

Maryland Safe Energy Coalition
ATTN: Mr. Richard Ochs
P.O. Box 33111
Baltimore, MD 21218

Dear Mr. Ochs:

I am responding to your letter dated September 19, 1993, in which you requested that I clarify a few points in the Nuclear Regulatory Commission's Director's Decision of August 16, 1993. The NRC staff has considered your concerns and your questions and has provided answers in the enclosed "Staff's Response to Questions Related to Director's Decision Under 10 C.F.R. § 2.206."

I trust this responds to your concerns.

Sincerely,

Original signed by
Robert M. Bernero

Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

Enclosure:
As stated

cc: Attached list

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*See previous concurrence

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Staff's Response to Questions Related to Director's Decision
Under 10 C.F.R. § 2.206

Question: Some terminology is used which we do not understand. For instance, on page 7 bottom, you refer to "a hypothetical bounding case accident." What is a "bounding case accident"?

Answer: As discussed in the licensee's Safety Analysis Report (SAR) and the staff's Environmental Assessment, a variety of credible accident scenarios which may affect the safe operation of the Calvert Cliffs ISFSI have been postulated. These include earthquakes, tornadoes, tornado missiles, lightning, fires, pressurization of the dry shielded canister (DSC), blockage of air inlets and outlets, cask drop, leakage of the DSC, and loss of air outlet shielding. Of these, canister leakage is the bounding case accident. For assessment purposes, a simultaneous failure of the DSC and all fuel cladding was postulated. This results in a loss of the helium cover gas and 30 percent of the radioactive Kr-85, I-129, and H-3 inventory in the spent fuel for one DSC. This assessment considers all release mechanisms that are credible for air-cooled casks, and the release fractions were based on a worst-case scenario for air-cooled transfer casks. Therefore, a bounding case accident is a worst-case accident that would encompass the consequences of all credible accident scenarios.

Question: On page 7 and 8, the staff "concluded that the radiation dose to the public is negligible" in a "worst-case DSC leakage accident." Could you please tell us what the staff considers a worst case (e.g., a plane crash into the ISFSI?) and exactly what amount of radiation would be released?

Answer: As discussed in the staff's Environmental Assessment (pages 25-29) the radiological releases from the worst-case DSC leakage accident (see above) would result in an upper bound dose of 31 mrem to the whole-body to an individual at the controlled area boundary. This dose is negligible compared with the Protective Action Guides (PAGs) dose of 5000 mrem (5 rem) established by the U. S. Environmental Protection Agency. In addition, the licensee concluded and the staff agrees that a plane crash into the ISFSI is so remote that it is not considered a credible accident. For the same reason, the staff did not analyze this type of accident as a design basis accident for the Calvert Cliffs Nuclear Power Plant.

Question: On page 8, it states that our letter of July 27, 1993, is currently under review by the NRC staff. Why did you deny our petition before this letter was reviewed? This inverted procedure does not

even have the appearance of objectivity. Does this review have the same docket number as the denied petition of December 21, 1992, a new docket number or no docket number?

When the staff reviews that letter, we would be most interested in knowing exactly what the blast impact, concussion or shock wave would be upon the Calvert Cliffs Power Plant itself (in precise units of measurement) if 1.5 million barrels of liquified natural gas exploded at Cove Point. We want numbers please.

Answer: Your letter of July 27, 1993, and the updated information from BG&E on the Cove Point Natural Gas Plant is currently under review by the NRC staff. As stated in the Director's Decision, this updated information would allow the NRC staff to evaluate any changed circumstances with respect to the operation of the Cove Point Plant and any significant differences in accident consideration from those previously analyzed by the staff. NRC could then impose appropriate action or mitigating measures, such as those earlier conditions NRC imposed when the Cove Point Plant was in operation in 1978, to ensure protection of the public health and safety in the event of an accident at the Cove Point Plant. The NRC staff does not believe there will be significant unresolved issues affecting public health and safety from the Cove Point Natural Gas Plant operation in the future that would result in the termination of the ISFSI operating license. Since the July 27, 1993, letter came in late in our review of the petition and since the licensee is required to provide NRC with a revised analysis before the operation of the Cove Point Natural Gas Plant, the staff does not agree that the issuance of the Director's Decision should have been delayed.

The staff's review of the new information will address the safety impact of the operation of the Cove Point Plant on the Calvert Cliffs Nuclear Power Plant including the ISFSI. The staff will consider the concerns you expressed in your July 27, 1993, letter. The staff will publish a Safety Evaluation Report (SER) that will be documented under the Calvert Cliffs Nuclear Power Plant and ISFSI docket numbers (50-317/318, 72-8). The SER will be available in NRC's public document room (PDR) and local public document room (LPDR).

Question: *On page 10, it states "The surface dose rates at the air inlets and outlets locations are less representative than dose rates at the HSM walls and door for assessing the effect on the direct radiation levels to individuals located beyond the controlled area." How would the staff know if the radiation passing through the walls and door is greater than the radiation in a plume emanating from the vents unless the vents were monitored?*

Answer: Since the dry shielded canister is sealed, it is not expected that radionuclides will leak out of the canister creating a plume

emanating from the vents. Direct radiation from gamma emitters is the major concern for radiation dose. As stated on page 10 of the Director's Decision, radiation levels at the air inlets and outlets would be measured when workers are in the vicinity of loaded HSMs, in accordance with the licensee's radiation protection program, to ensure that worker exposures are within the requirements of 10 CFR Part 20. Further, the licensee's environmental radiation program will ensure that the overall radiation dose to a member of the general public from the licensee's normal operation will be below the U.S. Environmental Protection Agency's Environmental Radiation Standards for fuel cycle facilities. The staff considers that the licensee's occupational and environmental monitoring program will ensure the protection of the health and safety of workers and the general public.

Question: On page 11, it states "Because the DSC is made of stainless steel, it is not subject to...embrittlement." Is it not true that stainless steel is more brittle than mild steel and that it can become more brittle by neutron bombardment?

Answer: The staff evaluated the design of the canister according to the ASME Boiler and Pressure Vessel (B&PV) Code, Section III, and concluded that the canister met the acceptable standards. The fluence of the neutron flux within the spent fuel is five orders of magnitude less than the fluence encountered within an operating reactor; therefore, embrittlement of the canister made of stainless steel or mild steel is not a concern in the design of the canister.

Concern raised on report entitled, "Characteristics of Spent Nuclear Fuel and Cladding Relevant to High-Level Waste Source Term."

"The study estimates that 5,000 fuel rods will have become breached at the time of dry storage and concludes that interactive pellet/cladding/container corrosion is inadequately addressed in current source-term models."

"It is unfortunate that this study was not brought to my attention before the petition of December 21, 1992, was denied. If it was, I would have submitted it as part of the docket record. However, your staff should have been aware of this study. Since it obviously is new information relevant to our original petition, I believe it constitutes grounds to reopen the case for reexamination. Please acknowledge this request."

Response: The study refers to the source-term model for performance assessments for the long-term geologic disposal of high-level waste (spent fuel), and is not directed to the specific case at the Calvert Cliffs Nuclear Power Plant. As described on page 12 of the Director's Decision, under normal operations of the ISFSI, leakage of radionuclides is not expected to occur, since the design and the double-seal welding of the DSC covers are checked and tested to provide structural integrity throughout the interim storage period.

Therefore, there are no significant specific health and safety issues involved in the Calvert Cliffs ISFSI operation. The source term model in the referenced study is to evaluate processes over 10,000 years of repository performance for geologic disposal, and is not related to the specific short term interim storage at the Calvert Cliffs Nuclear Power Plant. It also presumes substantially more fuel assemblies than are authorized for Calvert Cliffs. During the interim storage, the licensee is required to conduct a radiation monitoring program to ensure the protection of workers and the safety of the general public. Accordingly, the referenced study does not deal with issues surrounding the licensing of Calvert Cliffs and does not constitute grounds for reopening consideration of the December 21, 1992, petition.

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