



HITACHI

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Nuclear Energy

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Subject: Modification to 10 CFR 50.91(a) for EVESR Technical Specifications, Amendment Seven

References:

- 1) License DR-10, Docket 50-183
- 2) EVESR Technical Specification Amendment 7, (Letter from Latonya Mahlahla to Document Control Desk 6/23/08, LLM-2008-19)
- 3) No Significant Hazard Analysis (Letter from Latonya Mahlahla to Document Control Desk 8/11/08, LLM-2008-23)
- 4) 10 CFR 50.91(a) No Significant Hazard Analysis for EVESR Technical Specifications, Amendment Seven, (Letter from Latonya Mahlahla to Document Control Desk 8/19/08, LLM-2008-24)

Enclosure

- 1) Technical Basis for EVESR Technical Specifications, Amendment 7
- 2) Safety Evaluation by the Division of Reactor Licensing; dated June 17, 1968.

E-Hitachi submitted a license amendment request to the NRC for License DR-10, Docket 50-183 on June 23, 2008, with supplements dated August 11, 2008 and August 19, 2008. License Amendment Request Seven identified two proposed changes to the Technical Specifications for the ESADA Vallecitos Experimental Superheat Reactor (EVESR). In accordance with 10CFR 50.91 the proposed changes described in the license amendment request (Reference 2) were analyzed for no significant hazards consideration using the standards in 10 CFR 50.92. Upon further discussion with the NRC, Vallecitos wishes to change its characterization of the proposed Technical Specification changes from administrative to technical. Changing the characterization of the proposed changes from administrative to technical does not change the conclusion of the No Significant Hazards analysis.

Proposed change one expands the scope of work associated with the removal and disposal of component parts or devices from the EVESR facility as currently authorized by the facility license. GEH is removing components from the EVESR under the Vallecitos Nuclear Center Liabilities Reduction Project. The majority of EVESR support equipment is housed below the 549-ft elevation. In order for the process of component removal and disposal to continue, authorization for this activity to occur below the 549-ft level is needed.

Proposed change two removes unnecessary access control and locking requirements to areas below the 549-ft elevation of the EVESR containment. Since the reactor is no longer operating and the original reasons for locking access to areas below the 549-ft elevation are no longer applicable (see Enclosure 2), Vallecitos proposes to control access to all areas within the EVESR containment. All areas in the containment will be controlled in accordance with applicable sections of 10 CFR 20, as previously submitted in Reference 3 and as expanded in Enclosure 1.

The enclosed analysis provides additional technical bases to support GE-Hitachi finding that there are no significant hazards associated with operating the facility in accordance with the proposed amendment.

If you have any questions or need additional information, please contact me at 925-862-4360.

Sincerely,



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Donald R. Krause
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cc: John Buckley
Bob Evans

Enclosure 1
Technical Basis For EVESR Technical Specifications, Amendment 7

Affected Section: Technical Specifications Section A.2, Principle Activities currently states:

A.2 "The principal activities carried on within the plant area shall be the possession of the reactor facility, the dismantling of components other than the reactor pressure vessel, and activities authorized by licenses issued by appropriate regulatory authorities provided such activities do not involve access, except for reason of inspection, maintenance, and surveillance, to areas below the 549-ft. elevation within the containment building."

Proposed Change 1) Delete "provided such activities do not involve access, except for reason of inspection, maintenance, and surveillance, to areas below the 549-ft. elevation within the containment building" from page 1 of Technical Specification Section A.2. GEH request condition A.2 be amended as follows:

A.2 "The principal activities carried on within the plant area shall be the possession of the reactor facility, the dismantling of components other than the reactor pressure vessel, and activities authorized by licenses issued by appropriate regulatory authorities."

Affected Section: Technical Specifications Section B. 3 Surveillance and Security currently states:

B.3 "Access to areas below the 549-ft level shall remain covered by concrete blocks over the reactor vessel and the head and shield plug storage pit, by a wood cover over the empty spent fuel storage pit and by locked covers on the personnel and equipment hatchways. Keys to locks on the hatches and on the crane power switch shall be available only to the facility supervisor or his designated alternate."

Proposed Change 2) Delete the paragraph below condition C.3, Surveillance and Security in its entirety and replace with the following:

B.3 "Access to areas of the EVESR containment shall be controlled in a manner consistent with the requirements of 10 CFR 20.1601, Control of access to high radiation areas, as applicable."

10CFR50.91(a) No Significant Hazard Analysis

1) Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

Vallecitos has undertaken a program of a program of risk reduction by removing unnecessary components when possible. The proposed change one is submitted to expand the area where component removal activities are authorized to occur by the facility license. In order for Vallecitos to continue to reduce the radioactive footprint of EVESR, the process of component removal and disposal should continue and therefore, authorization for this activity to occur below the 549-ft level is needed.

When the above Technical Specification was put in place, June 1968, the EVESR had been shutdown for less than 2 years. Radiation levels vary with location, but in 1968, radiation levels were measured at 1 mr/hr on the 549-ft level, with elevated radiation levels at various

Enclosure 1
Technical Basis For EVESR Technical Specifications, Amendment 7

locations throughout the other containment levels (e.g. 30 mr/hr at the top of the spent fuel pool, and 65 mr/hr at a pipe location on the 503-ft level). The radiation levels below the 549-ft level were not appropriate for the activities GE planned on using the EVESR area for. Thus, the restriction for access to areas below the 549-ft level. Over time radiation levels have been reduced and stabilized. Current radiation levels (2008) within the EVESR containment show that, with the exception of one elevated radiation level in an isolated area of the 519-ft level, all direct reading radiation surveys are less than 1 mr/hr.

The only radiation danger to the public remains the same and is from dispersal of radioactive contamination outside of the EVESR containment. All areas in the EVESR containment will be controlled in accordance with 10 CFR 20. High Radiation areas will be controlled in a manner consistent with the requirements of 10CFR20.1601. Neither the reactor pressure vessel nor the containment structure are not being modified and remains a main contamination and radiation boundary. As such, component removal below the 549-ft level, not to include the reactor pressure vessel, does not increase the probability or consequences of an accident previously evaluated.

Proposed change two removes the specific shielding and covering requirements for the reactor vessel, shield plug storage pit and the empty spent fuel storage pit and modifies the access control requirements to be consistent with 10CFR20. The EVESR reactor was shutdown in 1967 and has remained in a "Possess Only" status. All fuel bundles were removed from the facility and the radiation levels have been reduced by the removal of radioactive material and natural decay. Previous uses of the 549-ft area and above have significantly changed since this requirement was established in 1968. Vallecitos no longer allows personnel to use the 549-ft deck as a platform for tests and experiments. The placement of shield blocks and restriction of access to the areas below the 549-ft level were to prevent unauthorized personnel from accessing the areas, which were radiation areas, while maintaining the 549-ft level available for experiments and demonstrations. Now, only personnel involved in monitoring or component removal are granted access to the EVESR containment. The shielding and access requirements are no longer necessary. As such, no aspect of the proposed changes will involve a significant increase in the probability or consequences of an accident previously evaluated.

2) Does the change create the possibility of a new or different kind of accident from any accident evaluated?

Response: No.

Proposed change one cannot create a new or different kind of accident. Component removal is authorized; while this activity is expanding, the reactor pressure vessel and containment continue to remain the main contamination and radiation boundaries.

Removal of the specific shielding and covering requirements for the reactor vessel, shield plug storage pit and the empty spent fuel storage pit and modification of the access control requirements as described in proposed change two will not impact the function or integrity of the containment, or the reactor pressure vessel that is the primary safety system required to be maintained by the license. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident evaluated.

3) Does the change involve a significant reduction in a margin of safety?

Enclosure 1
Technical Basis For EVESR Technical Specifications, Amendment 7

Response: No.

Increased restrictions on personnel access as well as removal of the specific shielding, covering and access control requirements will not result in a reduction of the margin of the safety for the EVESR facility. These controls were implemented to provide shielding and access controls to High Radiation Areas. When the Technical Specification was put in place, June 1968, the EVESR had been shutdown for less than 2 years. Radiation levels vary with location, but in 1968, radiation levels were measured at 1 mr/hr on the 549-ft level, with elevated radiation levels at various locations throughout the other containment levels (e.g. 30 mr/hr at the top of the spent fuel pool, and 65 mr/hr at a pipe location on the 503-ft level). The radiation levels below the 549-ft level were not appropriate for the activities GE planned on using the EVESR area for. Thus, the restriction for access to areas below the 549-ft level. Over time radiation levels have been reduced and stabilized. Current radiation levels (2008) within the EVESR containment show that, with the exception of one elevated radiation level in an isolated area of the 519-ft level, all direct reading radiation surveys are less than 1 mr/hr.

Since the radiological conditions within containment have been significantly reduced, the specific controls specified in the current technical specifications are not required. All areas in the EVESR containment will be controlled in accordance with 10 CFR 20. High Radiation areas will be controlled in a manner consistent with the requirements of 10CFR20.1601. The proposed changes do not affect the margins of safety.

Enclosure 2
Safety Evaluation by the Division of Reactor Licensing; dated June 17, 1968.

*Trans w/Amend #1 (License renewal -
Possession only)*

JUN 17 1968

JUN 17 1968

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DO NOT REPRODUCE

SAFETY EVALUATION BY THE DIVISION OF REACTOR LICENSING

DOCKET NO. 50-183

GENERAL ELECTRIC COMPANY

DEACTIVATION OF ESADA VALLECITOS EXPERIMENTAL

SUPERHEAT REACTOR (EVESR)

INTRODUCTION

By letter dated October 12, 1967, the General Electric Company (GE) submitted Application Amendment No. 14 to the license application for the EVESR which includes (1) an EVESR Deactivation Report, and (2) a request that License No. DR-10 be terminated. The reactor was shut down on February 1, 1967, and was subsequently deactivated.

Review of the EVESR Deactivation Report indicates that GE has not actually dismantled the facility pursuant to 10 CFR Part 50.82. In fact, the facility, if reactivated, would still be capable of sustaining nuclear fission in a self-supporting chain reaction. Accordingly, GE was informed that we would consider Application Amendment No. 14 as an application for authority to possess, but not to operate, the EVESR facility. Subsequently, GE submitted Application Amendment No. 15 dated December 20, 1967, and Modification No. 1 to Application Amendment No. 15 dated March 20, 1968.

GE desires to make use of portions of the EVESR facility for tests and experiments which would not involve operation of the reactor or use of the reactor pressure vessel or any system which is open to the reactor pressure vessel. Access to the area below the 549-ft elevation in the Containment Building would be restricted.

DEACTIVATION

All fuel and other special nuclear material for the EVESR has been removed and transferred from the facility. All water has been drained from the reactor vessel and from the primary system. Sources of water and pressurized air to the containment building are valved closed, and electric power to motors, solenoids and other out-of-service electrical systems are de-energized at the load centers.

The Containment Building ventilation system has been secured by de-energizing the supply and exhaust fans at the load center and locking the ventilation isolation valves closed. The outside door of both airlock entrances to the Containment Building have been padlocked. An absolute filter has been installed on a 2" penetration of the containment to vent the building to the atmosphere. Although the EVESR stack will be left open, the securing of the containment ventilation system precludes flow through the stack. The cooling towers,

condenser, heat exchanger and related piping systems have been drained, and electrical power to the pump and fan motors is locked out. The control room has been secured by de-energizing all electrical power to out-of-service equipment.

Concrete shield blocks are in place over the reactor pressure vessel, the head and shield storage pit and the pipe gallery space to prevent access to all areas below the 549-ft elevation. The power switch for the crane used to move the concrete blocks is locked, as are all hatchways, and the keys are retained by the facility supervisor or his designated alternate.

The EVESR radioactive liquid waste handling system is being kept in service until all waste water accumulated during the deactivation program can be processed and released through the Vallecitos Nuclear Center (VNC) waste handling system. Then the storage tanks and other components will be drained, and the valves and openings will be closed to contain any residual contamination.

The only radiation danger to the public from the unfueled, deactivated reactor would be from direct radiation from contaminated surfaces or by dispersal of residual contamination. As a part of the deactivation of EVESR, some radioactive equipment and hardware were disposed of by established waste-handling procedures. Other irradiated items are stored in the reactor vessel. Contaminated equipment and piping that remain in place have been surveyed to establish the radiation levels. This survey indicated that some contamination and radioactivity still exists in certain areas of the plant. All areas are posted as required by 10 CFR Part 20, and high radiation areas are secured to prevent unauthorized entry. Doors leading to high radiation areas actuate flashing red lights when opened. In addition, as described above, the concrete shield blocks and locked access hatches will preclude access to all areas in which any mechanical actions could disturb or release the residual radioactivity.

The EVESR is located within the boundaries of the Vallecitos Nuclear Center which is provided with a perimeter fence. A separate chain-link fence encloses the EVESR. Routine patrols are made by the security guards. Personnel from the General Electric Test Reactor organization will be responsible for controlling access to the deactivated EVESR and making periodic inspections of the facility. We believe that the procedures proposed for controlling access to the EVESR provide adequate protection against direct radiation hazard to VNC personnel and to the public.

Combustible material and potential sources of fire ignition have been removed or de-energized where practical. The VNC has a trained fire squad on duty 24 hours a day and the security guards make hourly fire checks during off-shift hours. Consequently, means are available for detecting and fighting any fire in the EVESR facility to control the spread of residual contamination.

CONCLUSION

We have concluded that the EVESR has been deactivated and that there is reasonable assurance that the facility will be maintained in such a manner that the health and safety of the public will not be endangered.

Dennis L. Zieman for

Donald J. Skovholt
Assistant Director for Reactor Operations
Division of Reactor Licensing

Date: June 17, 1968
