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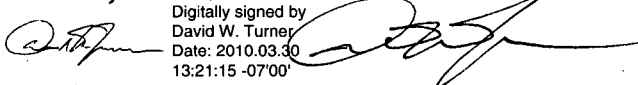
March 30<sup>th</sup>, 2010

Subject: Annual Report for EVESR, 2009  
Reference: License DR-10, Docket 50-183  
Enclosure: Annual Report No. 42

Enclosed is the Annual Report No. 42 for the deactivated ESADA-Vallecitos Experimental Superheat Reactor (EVESR) located at Vallecitos Nuclear Center near Sunol, California.

If there are any questions or additional information required, please contact me at the number above.

Sincerely Yours,

  
Digitally signed by  
David W. Turner  
Date: 2010.03.30  
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David W. Turner  
Manager, Vallecitos Nuclear Center

cc: John Buckley, NRC (by e-mail)  
Robert Evans, Region IV (by e-mail)

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**HITACHI**

GE Hitachi Nuclear Energy

*Vallecitos Nuclear Center  
Sunol, California*

**ESADA-VALLECITOS EXPERIMENTAL  
SUPERHEAT REACTOR  
(DEACTIVATED)**

**ANNUAL REPORT NO. 42  
FOR THE YEAR 2009**

**LICENSE DR-10  
DOCKET 50-183**

**MARCH 2010**

**ESADA-Vallecitos Experimental Superheat Reactor  
(Deactivated)**

**ANNUAL REPORT NO. 42**

General Electric Company has maintained the ESADA Vallecitos Experimental Superheat Reactor (EVESR) in a deactivated status under the authority of Amendment No. 3 to License DR-10, Docket 50-183, issued June 11, 1976. In this annual report, a summary of the status of the facility for the period of January 1, 2009 to December 31, 2009 is presented, as required by paragraph 3.E.2. of the license.

**1.0 SUMMARY**

Component removal activities began in 2008 above the 549 foot level. Tech Spec changes issues in Amendment 7 December 1, 2008 authorize the removal of systems beside the reactor vessel and bio-shield below the 549 level. Component removal continued in 2009 will continue in 2010. Entry into the containment building was made for routine radiation surveys and a general examination of conditions throughout the building. In accordance with written procedures, the Facility Manager controls access to the containment building.

Radiation levels remain essentially unchanged. Contamination levels are up slightly, reflecting the ongoing equipment removal activities.

**2.0 STATUS OF FACILITY**

The facility continues to be in deactivated status. The plugs to the reactor vessel and head storage shield, the wooden cover over the fuel storage pool remain in place.

**3.0 RADIATION AND CONTAMINATION**

Complete radiation and contamination surveys of the facility indicate that levels remain low. Results of the surveys are presented in Table 1. The radiation/contamination levels listed are representative but not necessarily maximum values.

**4.0 ACTIVITIES**

Routine inspections were conducted during this report period. Component removal and downsizing was continued.

4.234 mCi of material in 2354 ft<sup>3</sup> were removed and disposed in at the facility in Clive,

**Table 1**  
**Radiation and Contamination Level Data**  
**ESADA-Vallecitos Experimental Superheat Reactor (Deactivated)**

Date of Measurement:	Radiation Levels (mR/h Gamma)		Contamination Levels			
			Surface Smears Beta-Gamma (dpm/ft <sup>2</sup> )		Airborne Beta-Gamma <sup>1</sup> ( $\mu\text{Ci/cc} \times 10^{-10}$ )	
	12/08	12/09	12/08	12/09	12/08	12/09
Reactor Enclosure						
Top of spent fuel pool (main floor)	<1	<1	500	15,000		
549-ft level (main floor)	<1	<1	500	10,000	0.03	23.9
534-ft level	<1.5	<1	5,000	20,000		
519-ft level	<1	<1	20,000	10,000	0.03	11.9
503-ft level (maximum pipe reading)	<1	<1	2,500	10,000		
487-ft level (basement)	<1	<1	750	2,500	0.01	9.15

Note:

Radiation levels, surface smears, and air samples may vary from survey to survey as they are taken in general areas rather than at specific locations.

<sup>1</sup> 24-hour decayed values