

# NRC Radiological Surveys at the GE-Hitachi Vallecitos Nuclear Center

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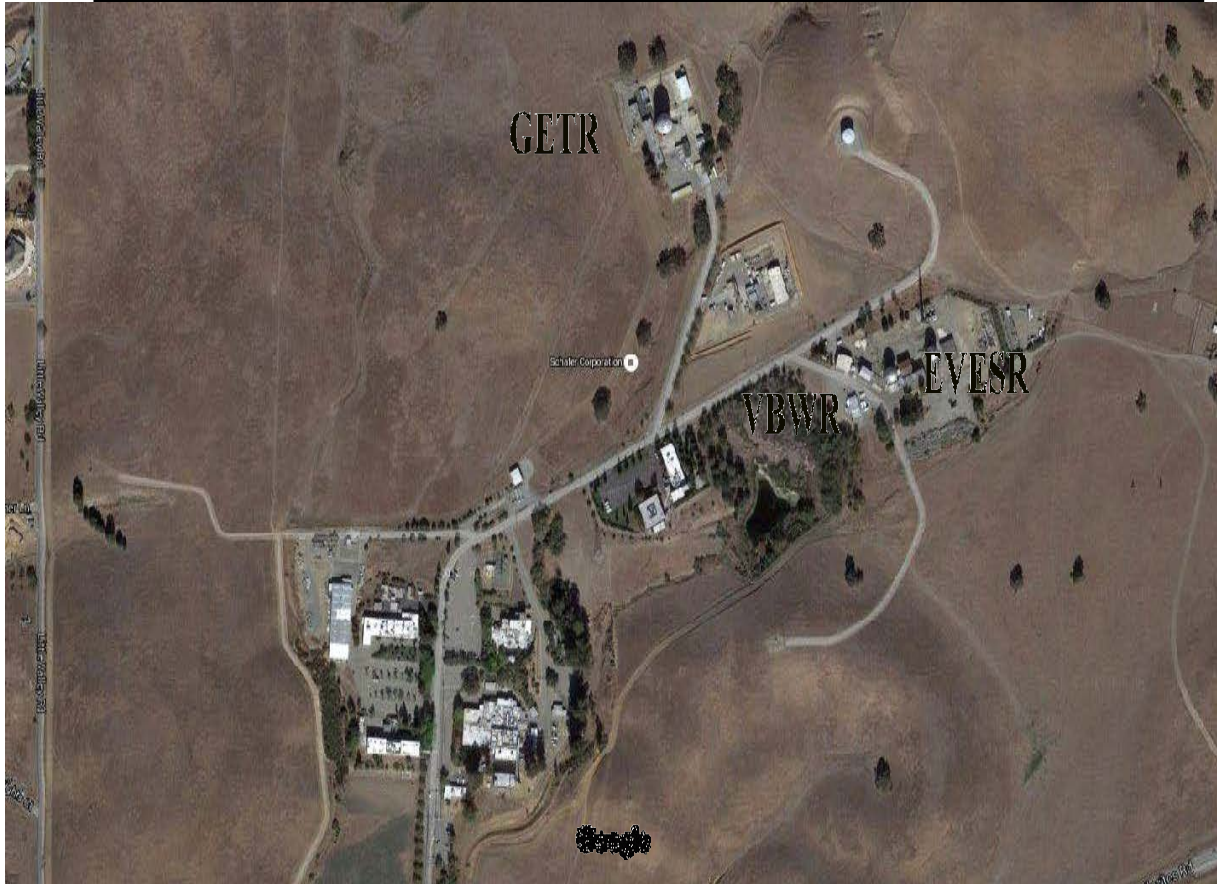
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U.S. Nuclear Regulatory Commission



# Vallecitos Nuclear Center



# Site History

- Three reactor facilities in SAFSTOR
  - VBWR (1965), EVESR (1970), GETR (1986)
- Supported AEC, civilian nuclear power research
  - Range of fuels for experiments, development and isotope production
- Extent of dismantlement varies at each facility



# Outdoor Surveys



# Outdoor Surveys

- Licensee classified land areas as “non-impacted”
  - Radiation surveys not required
- NRC verified classification by reviewing site history and conducting independent confirmatory surveys
- Lessons learned
  - Tilling of soils complicates survey data analysis
  - Local "background" data important



# Indoor Surveys



# Indoor Surveys

- NRC routinely conducts inspections at facilities in SAFSTOR
- Inspection Procedure 83750 for occupational radiation exposure inspections
- Radiation survey program needs to account for current radiological conditions
  - Performance of decommissioning activities
  - Routine entries into containment

# Inspection Procedure 83750

ADAMS Accession  
No. ML19270D454

<b>NRC INSPECTION MANUAL</b>		RDB
<b>INSPECTION PROCEDURE 83750</b>		
<b>OCCUPATIONAL RADIATION EXPOSURE</b>		
PROGRAM APPLICABILITY: IMC 2561, Appendix A; and 2600, Appendix B		
NOTE: IMC 2515, Appendix B and G, refer to this procedure as a supplemental procedure for use during transition from an operating power reactor to a decommissioning reactor facility.		
<b>83750-01 INSPECTION OBJECTIVES</b>		
To independently gather sufficient information to determine whether licensee performance meets the following objectives:		
01.01	To ensure adequate protection of worker health and safety from exposure to radiation or radioactive material at permanently shutdown reactors.	
01.02	To evaluate whether the licensee adequately identifies problems and implements appropriate and timely corrective actions related to occupational radiation safety.	
<b>83750-02 INSPECTION REQUIREMENTS</b>		
02.01	<u>Audits and Appraisals</u>	
	Review the results of audits and appraisals performed by or for the licensee since the last inspection. Review deficiency reports (also referred to as incident reports or off-normal occurrence reports) issued for the radiation protection program. Evaluate the adequacy of the licensee's corrective actions.	
02.02	<u>Changes</u>	
	Review major changes since the last inspection in organization, personnel, facilities, radiation instrumentation, equipment, programs, and procedures that may affect occupational radiation protection.	
02.03	<u>Radiological Work Planning</u>	
a.	Select 2-4 (depending on the scope of the licensee's work plans) radiologically significant work activities to verify the integration of ALARA planning into the work procedures and/or radiation work permit (RWP) documents.	
b.	For the selected activities, verify that the licensee's planning was commensurate with the risk of the work and identified appropriate dose reduction techniques, and defined reasonable dose goals.	
Issue Date: 11/14/19		
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83750		



# Indoor Surveys

- Radiological source term data should be well characterized and up to date
- Historic and current data should be assessed
  - Trends in radiological conditions
  - Postings of radiation areas
  - Airborne radiation hazards
  - Potential for contamination migration

# Indoor Surveys

- Instrument efficiencies must account for current radiological conditions being surveyed
  - Low energy betas and transuranics
- Use of smears and volumetric samples to assess radionuclide mixtures throughout facility
  - Wet and dry smears
  - Concrete samples

# Indoor Surveys

- Document facility aging management issues
  - Structural degradation, water intrusion
  - Determine if radionuclides are migrating, including subsurface (decommissioning planning rule requirements)
- Maintain safety culture as if operating
  - New decommissioning activities, aging facilities, changing source terms may pose challenges
  - Radiation and non-radiation hazards



# Conclusions

- Outdoor surveys
  - Adequate data on local background variability
  - Documentation of site history should include soil tilling practices
- Indoor surveys
  - 10 CFR Part 20 radiation survey, posting, airborne hazard requirements
  - Facility conditions
  - Non-radiation hazards

# Speaker Contact Information

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