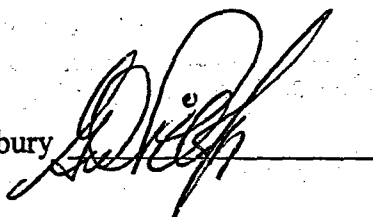|	DTBD–06-001
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Decommissioning Technical Basis Document	DPT 06-008
	RIC 2A.900

Rancho Seco Nuclear Generating Station Initial Classification of Survey Areas and Survey Design Sigma Values

PREPARED BY: G. Pillsbury _____ 5/4/06
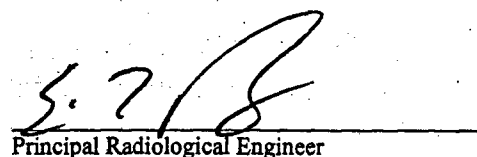Author   Date

REVIEWED BY: _____ 05/04/2006
Technical Reviewer   Date

REVIEWED BY: _____ 5/31/06
QA Reviewer   Date

APPROVED BY: _____ 6-12-06
Principal Radiological Engineer   Date

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1.0   PURPOSE

The purpose of this Decommissioning Technical Basis Document (DTBD) is to establish the basis for and the initial classification of survey areas. In addition, the sigma values for survey design are also provided.

2.0   DISCUSSION

Each of the areas listed in Table 5-4 of the LTP have been evaluated based on the results of operating history, the HSA, and site characterization data. Classification has been assigned using the criteria listed in NUREG-1575 and the Definitions below. The results of Characterization Surveys were used to determine the initial design sigma values. Design sigmas were calculated using the standard deviation function in Excel based on the survey data truncated at the proposed DCGLs.

3.0   DEFINITIONS

Class 1-areas that have, or had prior to remediation, a potential for contamination or known contamination above the DCGL.

Class 2-areas that have, or had prior to remediation, a potential for contamination or known contamination, but are not expected to exceed the DCGL.

Class 3-any impacted areas that are not expected to contain any residual radioactivity, or are expected to contain levels of residual radioactivity at a small fraction of the DCGL, based on site operating history and previous radiation surveys.

Non-Impacted (NI)-areas or systems that have no reasonable potential for residual contamination.

HSA-the Historical Site Assessment is a compilation of existing information on radiological and chemical contamination events and locations throughout the site.

4.0   TECHNICAL POSITION

Areas requiring final site survey have been classified according to the definitions in NUREG-1575.

Additionally, sigma values have been determined for survey design. These sigma values can be replaced with more current post remediation data.

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5.0 LIMITATIONS

Survey data for some areas had to be corrected for elevated background readings due to ongoing handling and storage of radioactive components or material.

6.0 TECHNICAL BASES

Areas were classified as Class 1 when the mean contamination levels exceeded the projected DCGLs for structures, systems, or soils as specified in the LTP. Class 1 was also assigned as the default classification in the absence of characterization data or operational information.

Class 2 areas were those areas in which the mean value of residual contamination levels was less than the DCGL and the mean plus one standard deviation also was less than the DCGL.

Class 3 areas were those in which the mean residual contamination level was less than 0.1 DCGL and the mean plus one standard deviation was also less than 0.1 DCGL.

Additionally, those <u>systems</u> that were filled with clean gas (e.g., air, CO_2) at pressures exceeding atmospheric, were unlikely to have become contaminated internally during plant operation. If exterior measurements and internal surveys and smears show no evidence of contamination and the HSA lists no contamination events or reports of cross-connection to contaminated systems, the system should be classified as NI. If any interior measurements show evidence of interior contamination (but well below the DCGL), the pipe will be classified as Class 3.

Those <u>systems</u> that were filled with clean liquids (e.g., fire protection water, fuel oil, and clean make-up water), operated at or above atmospheric pressure, and exterior and interior measurements, including smears, show no evidence of contamination and the HSA lists no contamination events or reports of cross-connection to contaminated systems, the systems should be classified as NI. If any interior measurements show evidence of interior contamination (but well below the DCGL), the pipe will be classified as Class 3.

Non-Impacted areas were those land areas surveyed and shown to have residual radioactivity levels "not significantly different from background" as described in the LTP.

Projected Structure DCGL: 43, 000 dpm/100 cm^2

Projected Pipe (Embedded & Buried) DCGL: 100,000 dpm/100 cm^2

Projected Soil DCGL: 50 pCi/g

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Given the projected DCGLs above, site structures, systems and areas were initially classified. The basis for each area's classification is shown in the attachment section.

7.0 REFERENCES

7.1 NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)"

8.0 ATTACHMENTS

8.1 Survey Area Classification Bases

8.2 Initial Survey Design Sigma Values

9.0 RESPONSIBLE INDIVIDUAL

George Pillsbury

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Attachment 8.1

Survey Area Classification Bases

Survey Area Classification

Area ID #: 100000
Survey Area: Plant Effluent Water Course

Operating History: This area was the release point for liquid effluents released from the plant. The area was impacted by both planned and unplanned liquid releases. Effluents were monitored under the operating RETS/REMP program. Operating records and the HSA document the release of radioactivity in this survey area. The HSA recorded multiple unplanned release events.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the predominant nuclide with a mean activity level of 9.2 pCi/g and a maximum value of 48.2 pCi/g. The Characterization data were found to be conservative when compared to the historical information found in the reports referenced in the PDP. Based on the classification procedure (DSIP-0020), the area was determined to be a Class 2 land area.

HSA Events: ODR-740017, 740052, 750046, 760079, 810192, 810193, 810209, 83008, 830023, 830248, 840117, 840118, 840225, 840223, 850299, 850112, 860555, 870764, 870905.
PDQ-880085, 890512, 890739.
AREORs (1984-1992)
Annual Environmental Report 2002.

Survey Area Classification

Area ID #: 100100
Survey Area: Area Surrounding the Plant Effluent Pathway

Operating History: This area bordered the release point for liquid effluents released from the plant and the overflow areas on each side of the creek. The area was not impacted by either the overflow of liquid release activity from the stream or the planned dispersion of dredged stream sediment. Operating records and the HSA document the absence of radioactivity in this survey area (the events listed below apply mainly to the discharge pathway). The Annual Environmental Report submitted to the NRC in 2002 contained the results of soil/sediment samples collected from this area.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. A special gamma scan survey was performed using vehicle-mounted HPGe detectors. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.349 pCi/g and a maximum value of 0.483 pCi/g. (Site background levels of Cs-137 have been determined to be approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated and determined to be "not significantly different from background" and classified as Non-Impacted.

HSA Events: ODR-740017, 760079, 830248, PDQ-890512.

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Survey Area Classification

Area ID #: 200000
Survey Area: South Plant Outfall

Operating History: This area bordered the release point for non-controlled/unmonitored liquid effluents released from the plant (ie. storm drains). The area extended from the south Industrial Area fence to the South Non-Impacted Area. Operating records and the HSA document the release of radioactivity in this survey area. The HSA recorded several unplanned release events from the RHUT with the potential to contaminate the area.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. A special gamma scan survey was performed using vehicle-mounted HPGe detectors. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.129 pCi/g and a maximum value of 0.301 pCi/g. (Site background levels of Cs-137 have been determined to be approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated and determined to be "not significantly different from background", however based on the history of spills along the south industrial area fence, the area was designated as a Class 3.

HSA Events: ODR-740017, 840217, 840317.

Potential Events: ODR-830238, 840111, 850075, 850237, 880055.
                  Annual Report 1989.
                  PDQ-890634, 900103, 900367, 920003, 930088, 950076, 990074, 020015.

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Survey Area Classification

Area ID #: 300000
Survey Area: South Non-Impacted Area

Operating History: This area bordered the release point for liquid effluents released from the plant. The area extended from the South Plant Outfall Area to the effluent area. Operating records and the HSA document no release of radioactivity in this survey area. The HSA recorded no unplanned release events.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. A special gamma scan survey was performed using vehicle-mounted HPGe detectors. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.323 pCi/g and a maximum value of 0.653 pCi/g. (Site background levels of Cs-137 have been determined to be approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated and determined to be "not significantly different from background", and was designated as Non-Impacted.

HSA Events: None

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Survey Area Classification

Area ID #: 400000
Survey Area: South East Non-Impacted Area

Operating History: This area bordered the Industrial Area, Area 200000, and Area 300000 to the east.
The area extended from the Industrial Area fence east beyond the meteorological tower. Operating
records and the HSA document no release of radioactivity in this survey area.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-
derived radionuclides. A special gamma scan survey was performed using vehicle-mounted HPGe
detectors. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.344 pCi/g
and a maximum value of 0.465 pCi/g. (Site background levels of Cs-137 have been determined to be
approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated and
determined to be "not significantly different from background", and was designated as Non-Impacted.

HSA Events: None

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Survey Area Classification

Area ID #: 500000
Survey Area: North East Non-Impacted Area

Operating History: This area, bordering 400000 to the north, extended from the Industrial Area fence east (exclusive of the parking lot and warehouse in this area) and north to the site boundary. Operating records and the HSA document no release of radioactivity in this survey area. The HSA recorded no unplanned release events.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. A special gamma scan survey was performed using vehicle-mounted HPGe detectors. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.145 pCi/g and a maximum value of 0.255 pCi/g. (Site background levels of Cs-137 have been determined to be approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated and determined to be "not significantly different from background", and was designated as Non-Impacted.

HSA Events: None

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Survey Area Classification

Area ID #: 600000
Survey Area: North Non-Impacted Area

Operating History: The area extended from the Industrial Area fence to the north and west site boundaries. Operating records and the HSA document no release of radioactivity in this survey area. The HSA recorded no unplanned release events.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. A special gamma scan survey was performed using vehicle-mounted HPGe detectors. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.164 pCi/g and a maximum value of 0.293 pCi/g. (Site background levels of Cs-137 have been determined to be approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated and determined to be "not significantly different from background", and was designated as Non-Impacted.

HSA Events: None

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Survey Area Classification

Area ID #: 700000
Survey Area: West Non-Impacted Area

Operating History: This area, bordered by 600000 to the north and 100000 to the south, extended from the Industrial Area fence west to the site boundary (exclusive of the ISFSI in this area). Operating records and the HSA document no release of radioactivity in this survey area however this area does border the effluent discharge area. The HSA recorded no unplanned release events.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. A special gamma scan survey was performed using vehicle-mounted HPGe detectors. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.202 pCi/g and a maximum value of 0.332 pCi/g. (Site background levels of Cs-137 have been determined to be approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated and determined to be "not significantly different from background", and was designated as Non-Impacted.

HSA Events: None

Survey Area Classification

Area ID #: 800100
Survey Area: Industrial Area Soils

Operating History: This area covers the majority of Industrial Area soils exclusive of the building footprints and rail line in this area. Operating records and the HSA document no specific release of radioactivity in these survey areas however this area does border known contaminated areas. The HSA recorded no specific unplanned release events.

Site Characterization: Soil and sediment samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.062 pCi/g and a maximum value of 0.299 pCi/g. (Site background levels of Cs-137 have been determined to be approximately 0.312 pCi/g.) As described in section 2 of the LTP, the area was evaluated using DSIP-0020 and was designated as Class 3.

Data summarized in the characterization of 800100 has been consolidated from the land survey of the following units:
800001 – 014

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Survey Area Classification

Area ID #: 800001
Survey Area: Folsom Canal Intake Area

Operating History: The intake canal area was the location of the water supply pumps which brought cooling water from the Folsom south canal to the site and the reservoir booster pump and strainers which provided reservoir make up from the Folsom south canal. It was located in the south-west quadrant of the Industrial Area. Operating records and the HSA document no potential for a release of radioactivity associated with this survey area. The HSA recorded no potential release events.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.073 pCi/g and a maximum value of 0.091 pCi/g. Based on the classification procedure (DSIP-0020) and absence of recorded contamination events, the area was determined to be a Class 3 land area. (The small paved area was included in 800002.)

HSA Events: None

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Survey Area Classification

Area ID #: 800002
Survey Area: Helicopter Landing Area

Operating History: The area was a large open area used for a landing pad by helicopters coming to the site. It was located in the southwest quadrant of the Industrial Area and was approximately 60% paved. Operating records and the HSA document no potential for a release of radioactivity associated with this survey area. The HSA recorded no potential release events. A small portion of the Intake canal pavement was included in this area since it was adjacent and similar.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.065 pCi/g and a maximum value of 0.127 pCi/g. Based on the classification procedure (DSIP-0020) and absence of recorded contamination events, the area was determined to be a Class 3 area.

HSA Events: None

Survey Area Classification

Area ID #: 800003
Survey Area: South Scrap Yard Area

Operating History: The area was an open area (approximately 90% paved) located on the south side of the Industrial Area. It was used to store scrap materials and as a staging area for construction materials for the gas turbine plant. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. The HSA recorded one potential release event (contaminated CRDM components found in the area).

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.121 pCi/g and a maximum value of 0.299 pCi/g. Based on the classification procedure (DSIP-0020) and absence of recorded contamination events, the area was determined to be a Class 3 area.

HSA Events:
ODR-840317, 850036,850075, 850112, 860494, 880055, 890634, 950076, 990074, 020015.
PDQ-940092

Survey Area Classification

Area ID #: 800004
Survey Area: Central N-S Transit/South Area

Operating History: The area was an open area with both paved and unpaved sections located on the south-central side of the Industrial Area between the switchyard and the GRS Fab Shop. Operating records and the HSA document the potential for a release of radioactivity associated RHUT spills impacting this survey area. The HSA recorded several RHUT release events.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.028 pCi/g and a maximum value of 0.048 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events:
ODR-750046, 840317, 85036, 850075, 850112, 850237, 860494, 880055, 890634, 930088, 950076, 990074, 020015.
PDQ- 880085, 880367, 881839, 900015, 900367, 940071
Annual Report 1989

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Survey Area Classification

Area ID #: 800005
Survey Area: South E-W Transit/East (road C) Area

Operating History: The area was located on the south side of the Industrial Area. It was that portion of the site that was covered by "C" warehouse and the southern most portion of the TDI building. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material in the "C" warehouse.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.088 pCi/g and a maximum value of 0.154 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: HSA Report pg. 64.
ODR-740017, 740052

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Survey Area Classification

Area ID #: 800006
Survey Area: Storm Drain Buffer Zone Area

Operating History: The area was located on the south side of the Industrial Area. It was that portion of the site that formed the buffer zone around the uncontrolled storm drain outfalls. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. The HSA documented several spills/leaks that entered the uncontrolled storm drains and that may have contaminated the buffer zone.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.085 pCi/g and a maximum value of 0.179 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: LER-7505, 8304, 8335.
ODR-740017, 740052, 750046, 850237, 880085, 880367, 881839, 900367.
RPDP- 2002-002
Annual Report 1989

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Survey Area Classification

Area ID #: 800007
Survey Area: West Industrial Area Yard

Operating History: The area was located on the west side of the Industrial Area to the north of the retention basins and IOSB. North of the IOSB were two concrete pads and the associated drainage swale running SW to NE. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. Radioactive material may have been temporarily stored in this area and there were spills/leaks that entered the uncontrolled storm drains that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.077 pCi/g and a maximum value of 0.144 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: PDQ- 900149

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Survey Area Classification

Area ID #: 800008
Survey Area: South Support Structures Yard Area

Operating History: The area was located in the southeastern quadrant of the Industrial Area and was approximately 80% paved. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the south yard and its many structures that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.083 pCi/g and a maximum value of 0.156 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: ODR- 740017, 740052
PDQ-940092

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Survey Area Classification

Area ID #: 800009
Survey Area: South East Industrial Area

Operating History: The area was located on the south east side of the Industrial Area exclusive of the Administrative Building. Operating records and the HSA document no potential for a release of radioactivity associated with this survey area. The HSA documented no storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.080 pCi/g and a maximum value of 0.099 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: None

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Survey Area Classification

Area ID #: 800012
Survey Area: Industrial Area Waste Storage Buffer

Operating History: The area was the open land area surrounding the barrel farm and the IOSB but excluding the IOSB and barrel farm. This area surrounded that used for the storage and/or transport of radioactive material. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.056 pCi/g and a maximum value of 0.071 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: None

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Survey Area Classification

Area ID #: 800013
Survey Area: Central Industrial Area

Operating History: The area was located north of, and extending to the south-east of, the cooling towers to the PAP, exclusive of the PAP, sewer plant, water treatment building, chlorine building, and intake structure. This area was used for the storage and/or transport of radioactive material. Operating records and the HSA document several nearby leaks or spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.070 pCi/g and a maximum value of 0.149 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: PDQ-900016.

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Survey Area Classification

Area ID #: 800014
Survey Area: North Industrial Area

Operating History: The area was located to the north of the spray ponds extending to the IA fence. This area was used for the storage of radioactive material. Operating records and the HSA document several nearby leaks or spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.060 pCi/g and a maximum value of 0.068 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: PDQ-900016.

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Survey Area Classification

Area ID #: 501003, 501004, and 501005
Survey Area: Upper/Outer Yard Area, Parking/Laydown area, and Site Access Road

Operating History: The area extended from the parking lot to the plant access road in the northeast quadrant of the site. Operating records and the HSA document the potential for a release of radioactivity in this survey area. The HSA recorded two potential release events. One event involved the discovery of a pallet of articles labeled as "Contact RP prior to disassembly outside the RCA". In addition, the area was used as a staging area for outgoing and incoming radioactive material shipments. The access road over which shipments were made runs through the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.088 pCi/g and a maximum value of 0.232 pCi/g. Based on the classification procedure (DSIP-0020), the area was determined to be a Class 3 area.

HSA Events: none

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Survey Area Classification

Area ID #: 803001
Survey Area: Quonset Hut and Associated Waste Yard Area

Operating History: The area was located to the northeast of the cooling towers and east of the spray ponds, excluding the Quonset hut pad itself. This area was used for the storage of radioactive material. Operating records and the HSA document several events with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.077 pCi/g and a maximum value of 0.146 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: HSA Report pg. 64.

Survey Area Classification

Area ID #: 806003
Survey Area: Area Surrounding the Spray Ponds

Operating History: The area was located to the north of the cooling towers and surrounding the spray ponds. This area was used for the storage of radioactive material. Operating records and the HSA document several events with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the only detected nuclide of plant origin with a mean activity level of 0.069 pCi/g and a maximum value of 0.167 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: PDQ-900149.

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Survey Area Classification

Area ID #: 810001
Survey Area: Tank Farm Area

Operating History: The area surrounded the tanks used to store radioactive liquids. This area was used for the storage of radioactive material. Operating records and the HSA document several events with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area. Records of soil samples taken near the BWST showed soil contamination levels as high as 230 pCi/g prior to remediation.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the primary nuclide of plant origin detected with a mean activity level of 379 pCi/g and a maximum value of 1,040 pCi/g. Based on the classification procedure (DSIP-0020) and levels of Cs-137 reported, the area was determined to be a Class 1 land area.

HSA Events:
ODR-840317, 850036, 850075, 850112, 850221, 850237, 860494, 860497, 880055, 890634, 950076, 990074, 020015.

PDQ-890600, 900299, 900367.

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Survey Area Classification

Area ID #: 826015
Survey Area: Spent Fuel/Diesel Gen room Gap Area

Operating History: The area consisted of the soil within the gap between the Spent Fuel Building and the North Diesel Generator Room of the Auxiliary Building. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Soil samples were collected and showed Cs-137 at mean activity levels of 0.041 pCi/g and a maximum activity of 0.047 pCi/g. Based on the classification procedure (DSIP-0020) and levels of activity reported, the area was determined to be a Class 2 area.

HSA Events: None

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Survey Area Classification

Area ID#: 834000
Survey Area: Railway Spurs

Operating History: The rail spur passes through two sections of the Non-Impacted portion of the site before entering the Industrial Area. The rail system was used to transport radioactive material from the site to the out of state waste disposal facilities. Even though the packages met DOT requirements for shipment, there is the potential for a small amount of contamination to be deposited along the rail right of way. There were no reports of rail contamination in the HSA and no documented, operational surveys showing evidence of contamination along the rail spur.

Site Characterization: Soil samples were collected along the rail line and analyzed by gamma spectroscopy on site. The mean value was 0.073 pCi/g Cs-137 and the maximum was 0.114 pCi/g. Based on classification procedure (DSIP-0020) and the characterization survey data, the rail spur was classified as Class 3.

HSA Events: None

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Survey Area Classification

Area ID #: 837000
Survey Area: A, B RHUT Area

Operating History: The area surrounded the A and B Regenerant Hold Up Tanks. This area was used for the storage of radioactive material. Operating records and the HSA document several leaks/spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Initial soil sampling prior to remediation showed activity levels up to 140 pCi/g with both Cs-137 and Co-60 detected. These samples were sent for HTD analysis and formed the basis for the soil nuclide fraction.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the primary nuclide of plant origin detected with a mean activity level of 4.09 pCi/g and a maximum value of 31.13 pCi/g. Based on the classification procedure (DSIP-0020) and initial levels of Cs-137 reported, the area was determined to be a Class 1 land area.

HSA Events:
ODR-750046, 85036, 850075, 850112, 860494, 880055, 900015.
Annual Report 1989
PDQ-890634, 930088, 950076, 990074, 020015.

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Survey Area Classification

Area ID #: 839000
Survey Area: Transformer Yard Area

Operating History: The area surrounded the main station transformer pads. The adjacent area was used for the storage of radioactive material. Operating records and the HSA document several leaks/spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the adjacent area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the primary nuclide of plant origin detected with a mean activity level of 0.432 pCi/g and a maximum value of 0.266 pCi/g. Based on the classification procedure (DSIP-0020) and initial levels of Cs-137 reported, the area was determined to be a Class 3 land area.

HSA Events: None

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Survey Area Classification

Area ID #: 843000
Survey Area: Barrel Farm Buffer Area

Operating History: The area was used for the temporary storage of packaged radioactive material as well as the segregation and consolidation of waste packages. Operating records and the HSA document several leaks/spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was the primary nuclide of plant origin detected with a mean activity level of 0.750 pCi/g and a maximum value of 4.250 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 1 land area.

HSA Events: HSA Report pg. 64.
RPDP- 91-008

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Survey Area Classification

Area ID #: 848000
Survey Area: Retention Basins Buffer Area

Operating History: This area is located at the southwest corner of the site. The area surrounds the structures that were used for containment and final treatment of liquid effluents prior to their release from the site. Contaminated resin was reported to have been found in the basins. Operating records and the HSA document occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area. Records confirmed the presence of radioactive material within the area and basin sediment/soil contamination levels up to ~290 pCi/g. In addition, soil contamination levels up to ~5 pCi/g prior to some decontamination activities.

Site Characterization: Soil samples were collected and showed Cs-137 at mean activity levels of 0.086 pCi/g and a maximum activity of 0.196 pCi/g. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the soil area around the asphalt was determined to be Class 3.

HSA Events: LER-8812.
ODR-830023, 830238, 830248, 840048.
PDQ-890086, 890091.

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Survey Area Classification

Area ID #: 851000
Survey Area: Switchgear Yard Area

Operating History: The area consisted of both paved and soil covered land. The area was located on the west side of the IA and contained the electrical switchgear for the system grid. Operating records and the HSA document the storage of radioactive material within the area.

Site Characterization: Soil samples were collected and showed Cs-137 at mean activity levels of 0.056pCi/g and a maximum activity of 0.072 pCi/g. Based on the classification procedure (DSIP-0020) and levels of activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.

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Survey Area Classification

Area ID#: 800200
Survey Area: Roads and Paved Areas

Operating History: Paved areas within the Industrial Area included the access road, parking lots, foundation pads from demolished temporary structures, and on-site transportation corridors used to transport materials across the site, including radioactive material. Both operational surveys and the HSA document contaminated asphalt and concrete within the IA and potential contamination events outside the IA.

Site Characterization: Paved areas were surveyed using gas flow proportional detectors with more than 300 direct measurements taken. Mean levels of contamination reported were 2,630 dpm/100 cm^2 with a maximum value of 5,262 dpm/100 cm^2. Additionally, the access roads were gamma scanned using a multiple detector array with the east road showing <0.17 pCi/g Cs-137 and the west road showing <0.23 pCi/g Cs-137. Based on classification procedure (DSIP-0020) and the levels of activity found on asphalt and concrete surfaces, the general paved areas of the site were classified as Class 3.

Data summarized in the characterization of 800200 has been consolidated from the survey of the paved surfaces in the following units:
800001 – 007,
800008 (including 818001, 820001, 827001, 828001, 838001, & 842000 pads)
800009
800010 (includes 839000 pads)
800011 (includes 853001 pad)
800012-014

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Survey Area Classification

Area ID #: 800001,2
Survey Area: Helicopter Landing Area

Operating History: The area was a large open area used for a landing pad by helicopters coming to the site. It was located in the southwest quadrant of the Industrial Area and was approximately 60% paved. Operating records and the HSA document no potential for a release of radioactivity associated with this survey area. The HSA recorded no potential release events. A small portion of the Intake canal pavement was included in this area since it was adjacent and similar.

Site Characterization: Paved sections were surveyed and found to have a mean value of 2,173 dpm/100 cm^2 and a maximum of 3,158 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and absence of recorded contamination events, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 800003
Survey Area: South Scrap Yard Area

Operating History: The area was an open area (approximately 90% paved) located on the south side of the Industrial Area. It was used to store scrap materials and as a staging area for construction materials for the gas turbine plant. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. The HSA recorded one potential release event (contaminated CRDM components found in the area).

Site Characterization: The paved portion was surveyed and found to have a mean value of 3,172 dpm/100 cm^2 and a maximum of 3,518 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and absence of recorded contamination events, the area was determined to be a Class 3 area.

HSA Events:
ODR-840317, 850036, 850075, 850112, 860494, 880055, 890634, 950076, 990074, 020015.
PDQ-940092

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Survey Area Classification

Area ID #: 800004
Survey Area: Central N-S Transit/South Area

Operating History: The area was an open area with both paved and unpaved sections located on the south-central side of the Industrial Area between the switchyard and the GRS Fab Shop. Operating records and the HSA document the potential for a release of radioactivity associated RHUT spills impacting this survey area. The HSA recorded several RHUT release events.

Site Characterization: The paved portion was surveyed and found to have a mean value of 1,613 dpm/100 cm^2 and a maximum of 1,719 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) the area was determined to be a Class 3 area.

HSA Events:
ODR-750046, 840317, 85036, 850075, 850112, 850237, 860494, 880055, 890634, 930088,950076, 990074, 020015.
PDQ- 880085, 880367, 881839, 900015, 900367, 940071
Annual Report 1989

Survey Area Classification

Area ID #: 800005
Survey Area: South E-W Transit/East (road C) Area

Operating History: The area was located on the south side of the Industrial Area. "C" warehouse and the southern most portion of the TDI building covered a small portion of this area. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material in the "C" warehouse.

Site Characterization: The paved portion was surveyed and found to have a mean value of 841 dpm/100 cm^2 and a maximum of 1,344 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.
ODR-740017, 740052

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Survey Area Classification

Area ID #: 800007
Survey Area: West Industrial Area Yard

Operating History: The area was located on the west side of the Industrial Area to the north of the
retention basins and IOSB. North of the IOSB were two concrete pads and the associated drainage
swale running SW to NE. Operating records and the HSA document the potential for a release of
radioactivity associated with this survey area. Radioactive material may have been temporarily stored in
this area and there were spills/leaks that entered the uncontrolled storm drains that may have had the
potential to contaminate the area.

Site Characterization: The paved portion was surveyed and found to have a mean value of 2,977
dpm/100 cm^2 and a maximum of 3,425 dpm/100 cm^2. Based on the classification procedure (DSIP-
0020) the area was determined to be a Class 3 area.

HSA Events: PDQ- 900149

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Survey Area Classification

Area ID #: 800008
Survey Area: South Support Structures Yard Area

Operating History: The area was located in the southeastern quadrant of the Industrial Area and was approximately 80% paved. Operating records and the HSA document the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the south yard and its many structures that may have had the potential to contaminate the area. Several temporary structures within this area have been removed and only the foundation pads remain. These areas (818001, 820001, 827001, 828001, 838001, & 842000) have been consolidated into 800008 and are summarized on pages 44 – 46.

Site Characterization: Paved areas were surveyed and found to have a mean value of 2,397 dpm/100 cm^2 and a maximum of 3,517 dpm/100 cm^2. Based on the classification procedure (DSIP-0020), the area was determined to be a Class 3 area.

HSA Events: ODR- 740017, 740052
PDQ-940092

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Survey Area Classification

Area ID #: 818000
Survey Area: Electrical Fabrication Shop Pad

Operating History: This structure, used by the electricians, was demolished and only the concrete foundation pad remains. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the remaining concrete surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 1,392 dpm per 100 cm^2 and a maximum value of 1,647 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 820000
Survey Area: L & D Building Pad

Operating History: This structure was demolished and only the concrete foundation pad remains. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the remaining concrete surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a. mean gross activity level of 2,593 dpm/100 cm^2 and a maximum value of 2,976 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 827000
Survey Area: Tool Room Pad

Operating History: This structure was demolished and only the concrete foundation pad remains. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document occurrences of contaminated tools found in the tool room with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the remaining concrete surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 1245 dpm/100 cm^2 and a maximum value of 1593 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.

Survey Area Classification

Area ID #: 828000
Survey Area: GRS Warehouse Pad

Operating History: This structure was demolished and only the concrete foundation pad remains. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document occurrences of contaminated tools found in the warehouse with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the remaining concrete surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 1337 dpm/100 cm^2 and a maximum value of 1892 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.

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Survey Area Classification

Area ID #: 838000
Survey Area: Fabrication Shop Pad

Operating History: This structure, which was used for fabrication of maintenance materials, was
demolished and only the concrete foundation pad remains. This area was reported to have been used for
maintenance of components containing radioactive material. Operating records and the HSA document
occurrences of radioactive material with the potential for a release of radioactivity associated with this
survey area.

Site Characterization: Direct measurements were made of the remaining concrete surfaces of the
structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a
mean gross activity level of 1413 dpm/100 cm^2 and a maximum value of 1772 dpm/100 cm^2. Based on
the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined
to be a Class 3 area.

HSA Events: HSA Report pg.64.

Survey Area Classification

Area ID #: 842000
Survey Area: Warehouse C

Operating History: This structure, which had been demolished with only the pad remaining, was used as an additional warehouse. This area was reported to have been used for the storage of radioactive material. Operating records and the HSA document occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the pad which confirmed the presence of plant-derived radionuclides. Direct measurements interior slab showed a mean gross activity level of 2207 dpm/100 cm^2 and a maximum value of 2468 dpm/100 cm^2. No exterior surveys were performed because the structure is slated for demolition except for the slab. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.

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Survey Area Classification

Area ID #: 800009
Survey Area: South East Industrial Area

Operating History: The area was located on the south east side of the Industrial Area exclusive of the Administrative Building. Operating records and the HSA document no potential for a release of radioactivity associated with this survey area. The HSA documented no storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: The paved portion was surveyed and found to have a mean value of 2,424 dpm/100 cm^2 and a maximum of 3,425 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 800010
Survey Area: Industrial Area Central Yard

Operating History: The open yard area was located in the center of the Industrial Area surrounding, but not including, the power block, the tank farm, the aux boiler pad, the RHUT, the rotor storage shed, warehouse "A" and the machine shop. The vast majority of the area is paved including the concrete pads of the transformer yard (identified as 839000 in the HAS and is summarized below). Operating records and the HSA document several nearby leaks or spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Paved areas were surveyed and found to have a mean value of 2,261 dpm/100 cm^2 and a maximum of 3,930 dpm/100 cm^2. Based on the classification procedure (DSIP-0020), the area was determined to be a Class 3 area.

HSA Events: LER-7505, 8304, 8335.
ODR-740017, 740052, 750046, 830248, 840317, 85036, 850075, 850112, 850221, 850237, 860494, 880055, 890634.
Annual Report 1989
PDQ-880085, 880367, 881839, 900015, 900367, 930088, 940071, 950076, 990074, 020015.

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Survey Area Classification

Area ID #: 839000
Survey Area: Transformer Yard Area

Operating History: The area surrounded the main station transformers. The adjacent area was used for the storage of radioactive material. Operating records and the HSA document several leaks/spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the adjacent area that may have had the potential to contaminate the area.

Site Characterization: Surface activity measurements were made using gas-flow proportional detectors. The results showed a mean activity level of 846 dpm/100 cm^2 and a maximum value of 3930 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and low levels of activity reported, the area was determined to be a Class 3 area.

HSA Events: None

Survey Area Classification

Area ID #: 800011
Survey Area: Industrial Area Central E-W Corridor

Operating History: The E-W corridor in the Industrial Area was located to the north of the rail spur between the cooling towers and the power block. Included in this survey unit were all the concrete and asphalt roads, the concrete berm beside the road, the raised area next to the cooling tower pipe cradle structure, and the asphalt/concrete pads remaining from the demolition of the Contractor Fab Shop (identified as 853000 in the HAS and is summarized below). Operating records and the HSA document several nearby leaks or spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: The pavement was surveyed. Measurements taken on the asphalt and concrete surfaces showed a mean level of 3,664 dpm/100 cm^2 and a maximum of 7,175 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 2 land area.

HSA Events: LER-7505, 8304, 8335.
ODR-750008, 750044, 810004, 830028, 830238, 830248, 840048, 840065, 850221, 870764, 870800, 870905, 870942, 880085, 880367, 881839, 900015, 900088, 900367, 940071.
Annual Report 1989

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Survey Area Classification

Area ID #: 853000
Survey Area: NPS Fabrication Shop

Operating History: This structure was used for the fabrication of maintenance materials. Post shutdown, this area was used for maintenance of components containing radioactive material. Operating records and the HSA document occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior of the structure which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 395 dpm/100 cm^2 and a maximum value of 2,093 dpm/100 cm^2. No exterior surveys were performed because the structure is slated for demolition except for the slab. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.

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Survey Area Classification

Area ID #: 800013
Survey Area: Central Industrial Area

Operating History: The area was located north of, and extending to the south-east of, the cooling towers to the PAP, exclusive of the PAP, sewer plant, water treatment building, chlorine building, and intake structure. This area was used for the storage and/or transport of radioactive material. Operating records and the HSA document several nearby leaks or spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Paved sections were surveyed and found to have a mean value of 2,593 dpm/100 cm^2 and a maximum of 4,403 dpm/100 cm^2. Based on the classification procedure (DSIP-0020), the area was determined to be a Class 3 area.

HSA Events: PDQ-900016.

Survey Area Classification

Area ID #: 800014
Survey Area: North Industrial Area

Operating History: The area was located to the north of the spray ponds extending to the IA fence. This
area was used for the storage of radioactive material. Operating records and the HSA document several
nearby leaks or spills with the potential for a release of radioactivity associated with this survey area.
The HSA documented the storage of radioactive material within the area that may have had the potential
to contaminate the area.

Site Characterization: Paved sections were surveyed and found to have a mean value of 2,696 dpm/100
cm^2 and a maximum of 3,055 dpm/100 cm^2. Based on the classification procedure (DSIP-0020), the
area was determined to be a Class 3 area.

HSA Events: PDQ-900016.

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Survey Area Classification

Area ID #: 501003, 501004, and 501005
Survey Area: Upper/Outer Yard Area, Parking/Laydown area, and Site Access Road

Operating History: The area extended from the parking lot to the plant access road in the north east quadrant of the site. Operating records and the HSA document the potential for a release of radioactivity in this survey area. The HSA recorded two potential release events. One event involved the discovery of a pallet of articles labeled as "Contact RP prior to disassembly outside the RCA". In addition, the area was used as a staging area for outgoing and incoming radioactive material shipments. The access road over which shipments were made runs through the area.

Site Characterization: These paved areas were surveyed and found to have a maximum mean value of 2,522 dpm/100 cm^2 and a maximum of 3,251 dpm/100 cm^2. Based on the classification procedure (DSIP-0020), the area was determined to be a Class 3 area.

HSA Events: ODR-870301.

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Survey Area Classification

Area ID #: 803001
Survey Area: Quonset Hut Pad and Associated Waste Yard

Operating History: The area was located to the north-east of the cooling towers and east of the spray ponds. The area was used for the processing, packaging, and storage of radioactive material. Operating records and the HSA document several events with the potential for a release of radioactivity associated with this area. The HSA documented the presence of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Asphalt and concrete covered surfaces were surveyed and found to have a mean value of 3,446 dpm/100 cm^2 and a maximum value of 3,821 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg.64.
PDQ 900016

Area ID #: 806001
Survey Area: East/West Spray Ponds

Operating History: The spray ponds were part of the cooling water system. The paved area surrounding the ponds was reported to have been used for the storage of radioactive material. Operating records and the HSA document several events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the exterior surfaces of the structure which confirmed the presence of plant-derived radionuclides. Direct measurements showed mean gross activity levels of 2,805, 2,566, and 2,680 dpm/100 cm^2 respectively for the east pond, west pond, and surrounding asphalt and maximum values of 3,289, 2,897, and 3,250 dpm/100 cm^2 respectively for the east pond, west pond, and surrounding asphalt. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: PDQ-900149

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Survey Area Classification

Area ID #: 808001
Survey Area: East/West Cooling Towers and Basins

Operating History: The cooling towers and basins were part of the condenser cooling water system. The paved area comprising the basins was not reported to have been used for the storage of radioactive material. Operating records and the HSA document one event with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the exterior surfaces of the structure which confirmed the presence of plant-derived radionuclides. Direct structure measurements showed a mean gross activity level of 4,952 dpm/100 cm^2 and a maximum value of 6,289 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 2 area.

HSA Events: PDQ-930036.

Survey Area Classification

Area ID #: 808003
Survey Area: Cooling Towers/Basins, Buffer Area

Operating History: The asphalt area surrounded the cooling towers and basins. This area was used for the storage of radioactive material. Operating records and the HSA document several events with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Surveys were made of the surrounding asphalt in the survey areas. The results showed a mean value of 2,894 dpm/100 cm^2 with maximum values of 14,025 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and the levels of activity reported, the area was determined to be a Class 2 area.

HSA Events: PDQ- 900367, 930036.

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Survey Area Classification

Area ID #: 809001
Survey Area: Sewer Plant

Operating History: The sewer plant processed the site sanitary waste. The paved area surrounding the plant was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure which confirmed no presence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 1,892 dpm/100 cm^2 and a maximum value of 2,169 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 819001
Survey Area: BWB Area

Operating History: The area historically surrounded by the former BWB structure which was constructed on an asphalt pad. This area was used for the storage of radioactive material. Operating records and the HSA document several events with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area. (Direct measurements made within the structure detected a mean surface activity of 2,497 dpm/100 cm^2 and a maximum value of 69,870 dpm/100 cm^2.) The structure was demolished and the asphalt pad was broken up during removal of buried pipe.

Site Characterization: Soil samples were collected and analyzed for the presence of plant-derived radionuclides. Cs-137 was detected with a mean activity level of 0.0.150 pCi/g and a maximum value of 0.350 pCi/g. Co-60 was detected in one sample at 0.090 pCi/g. Based on the classification procedure (DSIP-0020) and low levels of Cs-137 reported, the area was determined to be a Class 2 area.

HSA Events: None

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Survey Area Classification

Area ID #: 823000
Survey Area: Intake Pump Structure

Operating History: This structure, located south of the cooling towers, housed the pumps which delivered cooling water to the cooling towers. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 260 dpm/100 cm^2 and a maximum value of 1,375 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 824001
Survey Area: Plant Cooling Water Intake Pad Area

Operating History: The area surrounded the concrete pads to which the PCW and fire pumps were attached. This area was not reported to have been used for the storage of radioactive material but was adjacent to a storage area (808003). Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area. The HSA documented no storage of radioactive material within the area that may have had the potential to contaminate the area.

Site Characterization: Direct measurements were made using gas-flow proportional detectors. The results were a mean activity level of 3,941 dpm/100 cm^2 and a maximum value of 5,175 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and low surface activity reported, the area was determined to be a Class 2 area.

HSA Events: None

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Survey Area Classification

Area ID#: 826025
Survey Area: North Turbine Laydown Area

Operating History: The area consisted of the foundation pad for the main transformer and was adjacent to the rail spur serving the Turbine and Fuel Buildings. As such, the area was used for loading and transport of radioactive material for shipment off site. There were no specific operational surveys documenting contamination in this area.

Site Characterization: The transformer pad was surveyed using gas proportional detectors. The mean value found was 2,718 dpm/100 cm^2 and the maximum value was 3,207 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and the characterization survey data, the laydown area was determined to be a as Class 3 area.

Survey Area Classification

Area ID#: 834000
Survey Area: Railway Spurs

Operating History: The rail spur passes through two sections of the Non-Impacted portion of the site before entering the Industrial Area. The rail system was used to transport radioactive material from the site to the out of state waste disposal facilities. Even though the packages met DOT requirements for shipment, there is the potential for a small amount of contamination to be deposited along the rail right of way. There were no reports of rail contamination in the HSA and no documented, operational surveys showing evidence of contamination along the rail spur.

A gas proportional detector was used to survey the asphalt surrounding the rail spur within the IA. The mean value for paved surfaces was 3,653 dpm/100 cm^2 with one isolated area discovered by scan to be contaminated to 43 pCi/g Cs-137. This contaminated area (~ 3 by 4 meters) was located approximately 15 meters west of the north turbine laydown area (826025).

Based on classification procedure (DSIP-0020) and the characterization survey data, the rail spur was classified as Class 1

HSA Events: None

Survey Area Classification

Area ID #: 836000
Survey Area: Auxiliary Boiler Pad

Operating History: This structure, which contained the auxiliary boilers, was demolished and only the concrete foundation pad remains. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document several occurrences of radioactive leaks with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the remaining concrete surfaces of the structure that confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 5,382 dpm/100 cm^2 and a maximum value of 9,513 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 2 area.

HSA Events: ODR-830248, 840237.
RPDP-89-001
PDQ-88-0046, 88-1179, 88-1437, 89-486, 90-486.

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Survey Area Classification

Area ID #: 843000
Survey Area: Barrel Farm Paved Area

Operating History: The area was used for the temporary storage of packaged radioactive material as well as the segregation and consolidation of waste packages. Operating records and the HSA document several leaks/spills with the potential for a release of radioactivity associated with this survey area. The HSA documented the storage of radioactive material within the area that may have had the potential to contaminate the area. Site Characterization: Asphalt measurements showed a mean value of 9,393 dpm/100 cm^2 and a maximum of 14,579 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) the area was determined to be a Class 1 land area.
HSA Events: HSA Report pg. 64.
RPDP- 91-008

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Survey Area Classification

Area ID #: 848000
Survey Area: Retention Basins

Operating History: This structure is located at the southwest corner of the site. The structures were used for containment and final treatment of liquid effluents prior to their release from the site. Contaminated resin was reported to have been found in the basins. Operating records and the HSA document occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area. Records confirmed the presence of radioactive material within the area and basin sediment/soil contamination levels up to ~290 pCi/g. In addition, soil contamination levels up to ~5 pCi/g prior to some decontamination activities.

Site Characterization: Direct measurements were made of the exterior surfaces of the structures which confirmed the presence of plant-derived radionuclides. Direct measurements of exterior surfaces showed a mean gross activity level of 45,485 dpm/100 cm^2 and a maximum value of 45,910 dpm/100 cm^2. . Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the concrete basins and underlying soil were determined to be a Class 1 area. The asphalt surrounding the basins was determined to be Class 2 and the soil area around the asphalt (soil Cs-137 mean value of 0.086 pCi/g and a maximum of 0.198 pCi/g) was determined to be Class 3.

HSA Events: LER-8812.
ODR-830023, 830238, 830248, 840048.
PDQ-890086, 890091.

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Survey Area Classification

Area ID #: 850000
Survey Area: Solidification Pad/Wall Area

Operating History: The area was used for the solidification of liquid radioactive material prior to release.
Operating records and the HSA document several leaks/spills with the potential for a release of
radioactivity associated with this survey area. The HSA documented the presence of radioactive
material within the area.

Site Characterization: Direct measurements were made which confirmed the presence of plant-derived
radionuclides. Cs-137 was the primary nuclide of plant origin detected with a mean gross activity level
of 22,653 dpm/100 cm^2 and a maximum value of 322,600 dpm/100 cm^2. Based on the classification
procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 1
area.
HSA Events: PDQ-881434.

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Survey Area Classification

Area ID #: 851000
Survey Area: Switchgear Yard Area

Operating History: The area consisted of both paved and soil covered land. The area was located on the west side of the IA and contained the electrical switchgear for the system grid. Operating records and the HSA document the storage of radioactive material within the area.

Site Characterization: Direct measurements were made on the asphalt that confirmed the presence of plant-derived radionuclides with a mean gross activity level of 607 dpm/100 cm^2 and a maximum value of 1,000 dpm/100 cm^2. . Based on the classification procedure (DSIP-0020) and levels of activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.

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Survey Area Classification

Area ID #: 501001
Survey Area: Receiving Warehouse

Operating History: The structure was used for the staging, shipment and receipt of material, including radioactive material. The HSA documented the presence of radioactive material prepared for shipment within the area.

Site Characterization: Direct measurements were made which confirmed the presence of plant-derived radionuclides. Cs-137 was the primary nuclide of plant origin detected with a mean gross activity level of 1,734 dpm/100 cm^2 and a maximum value of 2,386 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report Pg. 60, section 6.11.3

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Survey Area Classification

Area ID #: 501002
Survey Area: Hazardous Material Warehouse

Operating History: The structure was used for the staging, shipment and receipt of material, including radioactive material. The HSA documented the presence of radioactive material prepared for shipment within the area.

Site Characterization: Direct measurements were made which confirmed the presence of plant-derived radionuclides. Cs-137 was the primary nuclide of plant origin detected with a mean gross activity level of 1,913 dpm/100 cm^2 and a maximum value of 2,642 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 804001
Survey Area: PAP Building

Operating History: The concrete, multi-story structure was used as the primary access point into the site by workers and provided office space for the security personnel. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure, which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 2,142 dpm/100 cm^2 and a maximum value of 4,387 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 805001
Survey Area: Administration Building

Operating History: The multi-story structure provided office space for the site personnel. There were no reports of this area having been used for the storage of radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure confirming the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 2,017 dpm/100 cm^2 and a maximum value of 4,387 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 811000
Survey Area: Reactor Building

Operating History: The reinforced concrete structure contained the reactor and supporting systems. The building contained four main elevations. Residual radioactive material was known to be present on all levels of the interior of the building. Operating records and the HSA document several events with the potential for a release of radioactivity inside this structure. No events documenting exterior contamination were found.

Site Characterization: Direct measurements were made of each of the interior elevation surfaces as well as the exterior surfaces of the structure. These measurements confirmed the presence of plant-derived radionuclides. Direct measurements on the –27' elevation showed a mean gross activity level of 1,535,383 dpm/100 cm^2 and a maximum value of 8,134,000 dpm/100 cm^2. Direct measurements on the grade elevation showed a mean gross activity level of 201,670 dpm/100 cm^2 and a maximum value of 370,000 dpm/100 cm^2. Direct measurements on the +40' elevation showed a mean gross activity level of 51,521 dpm/100 cm^2 and a maximum value of 99,150 dpm/100 cm^2. Direct measurements on the +60' elevation showed a mean gross activity level of 20,110 dpm/100 cm^2 and a maximum value of 46,660 dpm/100 cm^2. Direct measurements on the exterior roof showed a mean gross activity level of 1,364 dpm/100 cm^2 and a maximum value of 1,571 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the interior of the reactor building was determined to be a Class 1 area and the exterior was a Class 3.

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 812000
Survey Area: Spent Fuel Building

Operating History: The reinforced concrete structure contained the spent fuel pool and supporting systems. The building contained three main elevations including the pool. Residual radioactive material was known to be present on all levels of the interior of the building. Operating records and the HSA document several events with the potential for a release of radioactivity inside this structure. Three documented instances of contamination through the common fuel building/turbine building wall were noted.

Site Characterization: Direct measurements were made of each of the interior elevation surfaces as well as the exterior surfaces of the structure. These measurements confirmed the presence of plant-derived radionuclides. Direct measurements on the pool elevation showed a mean gross activity level of 16,900,000 dpm/100 cm^2 and a maximum value of 200,000,000 dpm/100 cm^2. Direct measurements on the +40' elevation showed a mean gross activity level of 5,942 dpm/100 cm^2 and a maximum value of 19,357 dpm/100 cm^2. Direct measurements on the building exterior showed a mean gross activity level of 1,408 dpm/100 cm^2 and a maximum value of 21,600 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the interior of the spent fuel building was determined to be a Class 1, 2 area and the exterior was a Class 2, 3.

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 813000
Survey Area: Auxiliary Building

Operating History: The reinforced concrete structure contained the RadWaste processing and supporting systems. The building contained six main elevations. Residual radioactive material was known to be present on all levels of the interior of the building. Operating records and the HSA document several events with the potential for a release of radioactivity inside this structure. One report documented contamination of the auxiliary building roof. The roof was later replaced.

Site Characterization: Direct measurements were made of each of the interior elevation surfaces as well as the exterior surfaces of the structure. These measurements confirmed the presence of plant-derived radionuclides. Direct measurements on the –47' elevation showed a mean gross activity level of 320,071 dpm/100 cm^2 and a maximum value of 5,720,000 dpm/100 cm^2. Direct measurements on the –29' elevation showed a mean gross activity level of 544,756 dpm/100 cm^2 and a maximum value of 11,370,000 dpm/100 cm^2. Direct measurements on the –20' elevation showed a mean gross activity level of 247,831 dpm/100 cm^2 and a maximum value of 10,080,000 dpm/100 cm^2. Direct measurements on the grade elevation showed a mean gross activity level of 373,758 dpm/100 cm^2 and a maximum value of 5,800,000 dpm/100 cm^2. Direct measurements on the +20' elevation showed a mean gross activity level of 85,408 dpm/100 cm^2 and a maximum value of 1,900,000 dpm/100 cm^2. Direct measurements on the +40' elevation showed a mean gross activity level of 3,288 dpm/100 cm^2 and a maximum value of 24,781 dpm/100 cm^2. Direct measurements on the building exterior, including the mezzanine roof, showed a mean gross activity level of 1,897 dpm/100 cm^2 and a maximum value of 2,990 dpm/100 cm^2. (The roof had been replaced prior to the classification survey.) Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the interior of the auxiliary building was determined to be a Class 1, 2 area and the exterior was a Class 2,3.

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 814000
Survey Area: Training and Records Building

Operating History: The multi-story structure provided office and laboratory space for the site personnel. This area was sometimes used for processing and measuring samples of radioactive material. Operating records and the HSA document multiple events with the potential for a minor release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 1,865 dpm/100 cm^2 and a maximum value of 2,995 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: PDQ-900076.

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Survey Area Classification

Area ID #: 815000
Survey Area: Nuclear Services Electrical Building

Operating History: The multi-story structure provided safety-class electrical distribution to site systems. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document two events (both associated with the building sump) with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure, which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 1,913 dpm/100 cm^2 and a maximum value of 2,669 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: PDQ-940025, 940083.

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Survey Area Classification

Area ID #: 816000
Survey Area: Control Alarm Station Building

Operating History: The concrete structure housed security monitoring and alarm functions for the site. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 2,327 dpm/100 cm^2 and a maximum value of 3,327 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 817000
Survey Area: TDI Diesel Generator Building

Operating History: This concrete structure contained the emergency diesel generators. This area was used for the storage of radioactive material, namely the fuel transfer cask and associated equipment. Operating records and the HSA document no release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure that confirmed the absence of plant-derived radionuclides. Direct measurements showed a mean gross activity level of 2,343 dpm/100 cm^2 and a maximum value of 4,066 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 821000
Survey Area: Water Treatment Building

Operating History: This structure, located south of the cooling towers, was used to treat cooling water.
This area was not reported to have been used for the storage of radioactive material. Operating records
and the HSA document no events with the potential for a release of radioactivity associated with this
survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the
structure, which confirmed the absence of plant-derived radionuclides. Direct measurements showed a
mean gross activity level of 2,968 dpm/100 cm^2 and a maximum value of 3,816 dpm/100 cm^2. Based on
the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined
to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 822000
Survey Area: Chlorine Building

Operating History: This small structure, located south of the cooling towers, was used to add chlorine to the cooling water. One interviewed employee reported this area may have been used for the storage of containerized radioactive material. Operating records and the HSA document no events with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure, which confirmed the absence of plant-derived radionuclides. Some measurements were adjusted for high exterior background levels caused by the handling and storage of radioactive components in the area. Direct measurements showed a mean gross activity level of 1,517 dpm/100 cm^2 and a maximum value of 3,832 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 826000
Survey Area: Turbine Building

Operating History: The reinforced concrete and steel structure contained the turbine-generator and supporting systems. The building contained five main elevations. Residual radioactive material was known to be present on all levels of the interior of the building. Operating records and the HSA document several events with the potential for a release of radioactivity inside this structure.

Site Characterization: Direct measurements were made of each of the interior elevation surfaces as well as the exterior surfaces of the structure. These measurements confirmed the presence of plant-derived radionuclides. Direct measurements in the condenser pit elevation showed a mean gross activity level of 3077 dpm/100 cm^2 and a maximum value of 24,900 dpm/100 cm^2. Direct measurements on the grade elevation showed a mean gross activity level of 2,035 dpm/100 cm^2 and a maximum value of 6,980 dpm/100 cm^2. Direct measurements on the mezzanine elevation showed a mean gross activity level of 1,566 dpm/100 cm^2 and a maximum value of 2,626 dpm/100 cm^2. Direct measurements on the +40' elevation showed a mean gross activity level of 2,843 dpm/100 cm^2 and a maximum value of 3,615 dpm/100 cm^2. Direct measurements on the building exterior showed a mean gross activity level of 1,984 dpm/100 cm^2 and a maximum value of 10,312 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the interior of the turbine building was determined to be Class 1, 2, & 3 areas and the exterior was a Class 3.

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 831000
Survey Area: Microwave Communications Building

Operating History: This concrete structure is currently being used to house the site microwave system.
Operating records and the HSA document no occurrences of a radioactive material release within this
survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the
structure which confirmed the absence of plant-derived radionuclides. Direct measurements of the
interior showed a mean gross activity level of 1,568 dpm/100 cm^2 and a maximum value of 6,344
dpm/100 cm^2. Direct measurements exterior showed a mean gross activity level of 2,875 dpm/100 cm^2
and a maximum value of 13,253 dpm/100 cm^2. Survey results were adjusted to account for elevated
background due to the handling and storage of radioactive material and components in the vicinity. The
exterior values are likely to still be affected by elevated background. Based on the classification
procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3
area.

HSA Events: None

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Survey Area Classification

Area ID #: 833000
Survey Area: Warehouse B

Operating History: This structure was used as a warehouse. This area was reported to have been used for the storage of radioactive material. Operating records and the HSA document two occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure which confirmed the absence of plant-derived radionuclides.. Direct measurements interior showed a mean gross activity level of 635 dpm/100 cm^2 and a maximum value of 3,751 dpm/100 cm^2. Direct measurements exterior showed a mean gross activity level of 3,749 dpm/100 cm^2 and a maximum value of 34,785 dpm/100 cm^2. Survey results were adjusted for background levels caused by the handling and temporary storage of radioactive components nearby. The building exterior values may still show the effects of local background. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 interior and Class 2 exterior area.

HSA Events: PDQ-840010, 980017.

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Survey Area Classification

Area ID #: 840000
Survey Area: Warehouse A

Operating History: This structure was used as a primary site warehouse with attached office space. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure which confirmed the absence of plant-derived radionuclides. Direct measurements interior showed a mean gross activity level of 1,941 dpm/100 cm^2 and a maximum value of 3,397 dpm/100 cm^2. Direct measurements exterior showed a mean gross activity level of 2,310 dpm/100 cm^2 and a maximum value of 3,838 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 851003
Survey Area: Switchyard Control Building

Operating History: This structure was used to house the instrumentation and equipment associated with monitoring and operating the electrical switchyard. This area was not reported to have been used for the storage of radioactive material. Operating records and the HSA document no occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure that confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 1,663 dpm/100 cm^2 and a maximum value of 2,376 dpm/100 cm^2. Direct measurements of the exterior showed a mean gross activity level of 1,397 dpm/100 cm^2 and a maximum value of 1,843 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None. However, there was a later report of contaminated cameras being stored and maintained in the building.

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Survey Area Classification

Area ID #: 852000
Survey Area: Machine Shop

Operating History: This structure was used for the cutting, drilling, grinding and welding on maintenance materials. This area was reported to have been used for maintenance of components containing radioactive material. Operating records and the HSA document occurrences of radioactive material with the potential for a release of radioactivity associated with this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure, which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 1,973 dpm/100 cm^2 and a maximum value of 2,408 dpm/100 cm^2. Direct measurements of the exterior showed a mean gross activity level of 2,087 dpm/100 cm^2 and a maximum value of 2,620 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: HSA Report pg. 64.

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Survey Area Classification

Area ID #: 856000
Survey Area: Secondary Alarm Station Building

Operating History: This concrete structure is currently being used to house the secondary security alarm function. Operating records and the HSA document no occurrences of a radioactive material release within this survey area.

Site Characterization: Direct measurements were made of the interior and exterior surfaces of the structure that confirmed the absence of plant-derived radionuclides. Direct measurements interior showed a mean gross activity level of 300 dpm/100 cm^2 and a maximum value of 2,636 dpm/100 cm^2. Direct measurements exterior showed a mean gross activity level of 293 dpm/100 cm^2 and a maximum value of 4,197 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the area was determined to be a Class 3 area.

HSA Events: None

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Survey Area Classification

Area ID #: 899002
Survey Area: Auxiliary Feed Water System Piping

Operating History: This system provided an alternate pathway for delivering feed water to the steam generators. This system was reported to have been contaminated as a result of steam generator primary to secondary tube leaks. Operating records and the HSA document occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 368 dpm/100 cm^2 and a maximum value of 634 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 899005
Survey Area: Clean Drain System, Storm Drain Non-Discharge Piping

Operating History: This system collected leakage from clean systems and storm water and routed it to the liquid effluent piping for release. This system was contaminated by leakage from systems that had become contaminated as a result of steam generator primary to secondary tube leaks. Operating records and the HSA document occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 2,901 dpm/100 cm^2 and a maximum value of 4,334 dpm/100 cm^2. Catch basins were also surveyed and surface activity mean value was 62 dpm/100 cm^2 and the maximum value was 1,017 dpm/100 cm^2. Sediment activity mean value for Cs-137 was 0.158 pCi/g and a trace level of Co-60 in one sample. Based on the classification procedure (DSIP-0020) and levels of gross activity reported in the remaining sections of pipe, the system was determined to be a Class 3 system.

HSA Events: LER-7505, 8304, 8335.
ODR-740017, 740052, 750008, 750044, 750046, 810004, 830028, 830238, 830248, 840048, 840065, 840317, 85036, 850075, 850112, 850221, 850237, 860494, 870764, 870800, 870905, 870942, 880055, 880085, 880367, 881839, 890634, 900015, 900088, 900367, 940071, 950076, 990074, 020015.
Annual Report 1989
PDQ-890600, 900299.

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Survey Area Classification

Area ID #: 899006
Survey Area: Component Cooling Water System Piping

Operating History: This system provided a pathway for cooling water to various heat exchangers and operating system coolers. This system was contaminated by heat exchanger/cooler tube leakage from radioactive systems. Operating records and the HSA document occurrences of radioactive contamination associated with this system piping. CCW also provided cooling water to the turbine cooling water system, which removed heat from various non-radioactive components.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of radioactivity. Direct measurements of the interior showed a mean gross* activity level of 780 dpm/100 cm^2 and a maximum value of 10,482 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

   * Gross activity adjusted for background

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 899007
Survey Area: Clean Drain System Piping-Turbine

Operating History: This system collected clean water leakage and condensate from the turbine and routed it to the drain tank. This system was contaminated by radioactive system leakage into steam, feed and cooling water systems. Operating records and the HSA document occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 56,208 dpm/100 cm^2 and a maximum value of 680,000 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 1 system.

HSA Events: ODR-800111, 871122.
Annual Report 1988.

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Survey Area Classification

Area ID #: 899008
Survey Area: Clean Drain System Piping-Sewer

Operating History: This system collected sanitary waste and gray water and routed it to the sewer plant for treatment and release. This system was not contaminated. Operating records and the HSA document no occurrences of radioactive contamination associated with this system piping.

Site Characterization: The sewage effluent was periodically monitored during normal plant operations and decommissioning. Samples collected and analyzed by gamma spectroscopy showed no plant-derived radioactivity at levels above the environmental LLDs. Converting the volumetric activity to system surface activity would equate to ≤ 6 dpm/100 cm^2. This level of surface activity is below the environmental LLD for "other volumetric fluids", below the sewage sludge LLD, and below the instrument MDC for both the 43-68 and 43-116 gas flow proportional detectors, which would be used for surveys. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Non-Impacted system.

HSA Events: PDQ 94025

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Survey Area Classification

Area ID #: 899009
Survey Area: Clean Drain System Piping-Storm Drain/Liquid Discharge

Operating History: This system provided a pathway for clean system leakage to be routed into the closed drain system without going overboard. This system was known to be contaminated down stream of the liquid waste inlet. Operating records and the HSA document the occurrence of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 4,568 dpm/100 cm^2 and a maximum value of 17,796 dpm/100 cm^2. However, sediment taken from the pipe interior had Cs-137 activity of 186 pCi/g and Co-60 activity of 23.5 pCi/g. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 1 system.

HSA Events: HSA Report pg. 54-59.

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Survey Area Classification

Area ID #: 899010
Survey Area: Diesel Fuel Oil System Piping

Operating History: This system transported clean diesel fuel from the storage tank to the diesel generators used on site. This system was known to be clean. Operating records and the HSA document no occurrence of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of $-8,894$ dpm/100 cm^2 and a maximum value of 186 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Non-Impacted system.

HSA Events: None

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Survey Area Classification

Area ID #: 899011
Survey Area: Decay Heat System Piping

Operating History: This system transported contaminated reactor coolant water through the heat
exchangers which removed reactor decay heat during shutdown conditions. This system was known to
be contaminated. Operating records and the HSA document the occurrence of radioactive contamination
associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping
which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior
showed a mean gross activity level of 480,508 dpm/100 cm^2 and a maximum value of 3,412,000
dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported,
the system was determined to be a Class 1 system.

HSA Events: N/A Radioactive by design.

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Survey Area Classification

Area ID #: 899017
Survey Area: Fire Protection Water System Piping

Operating History: This system transported clean reservoir water through the wet-pipe sprinkler systems, fire hydrants and hose stations on site. The system was filled with clean water, operated at or above atmospheric and there were no reported instances of cross-connection to a contaminated system. This system was known to be operationally clean. Operating records and the HSA document no occurrence of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 35 dpm/100 cm^2 and a maximum value of <1,154 dpm/100 cm^2. Beta scans taken on the exterior surfaces of the system showed no detectable activity above background. Gamma spectroscopy of material removed from the pipe showed no evidence of plant-derived radioactive material. Based on the classification procedure (DSIP-0020) and the absence of gross activity reported, the system was determined to be a Non-Impacted system.

HSA Events: None

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Survey Area Classification

Area ID #: 899025
Survey Area: Instrument Air System Piping

Operating History: This system transported clean (i.e., filtered), dry air through the instrument control systems on site. This system was operated at pressure and was known to be clean. Operating records and the HSA document no occurrence of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of $-5,367$ dpm/100 cm^2 and a maximum value of 1,520 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Non-Impacted system.

HSA Events: None

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Survey Area Classification

Area ID #: 899029
Survey Area: Main Circulating Water System Piping

Operating History: This system transported clean water through the condenser and to the cooling towers in order to remove the latent heat of condensation. This system was known to be clean. Operating records and the HSA document one occurrence of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements of the interior showed a mean gross activity level of 475 dpm/100 cm^2 and a maximum value of 614 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

HSA Events: PDQ-900085

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Survey Area Classification

Area ID #: 899032
Survey Area: Nitrogen Gas System Piping

Operating History: This system distributed nitrogen gas to various primary tanks and systems to maintain an inert cover gas. This system was designed to be clean but had become contaminated by operational events that contaminated the piping. Operating records and the HSA document several occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of radioactivity above background levels. Direct measurements of the interior showed a mean gross activity level of 19,096 dpm/100 cm^2 and a maximum value of 33,208 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 2 system.

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 899034
Survey Area: Nuclear Service Raw Water System Piping

Operating History: This system was a two-train, redundant system that provided filtered cooling water to heat exchangers and coolers associated with components critical to nuclear safety. During plant shutdown, the system provided a heat sink for decay heat removal. This system was clean. Operating records and the HSA document no occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct gamma measurements of the interior showed a mean gross activity level of 4,880* dpm/100 cm^2 and a maximum value of 8,100* dpm/100 cm^2. Interior beta measurements had a mean activity of 28 dpm/100 cm^2 and a maximum of 413 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

* residual radioactivity results are not corrected for detector background.

HSA Events: None

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Survey Area Classification

Area ID #: 899035
Survey Area: Nuclear Service Cooling Water System Piping

Operating History: This system was a two-train, redundant system which provided dematerialized cooling water to heat exchangers and coolers associated with components critical to nuclear safety and transferred the heat to the NRW system. This system was designed to be clean. However, the system piping became contaminated due to various primary to secondary system leaks. Operating records and the HSA document several occurrences of minor radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of -59 dpm/100 cm^2 and a maximum value of 174 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

HSA Events: ODR-870582.

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Survey Area Classification

Area ID #: 899036
Survey Area: Plant Cooling Water System Piping

Operating History: This system provided cooling water from the site reservoir to heat exchangers and coolers associated with secondary system components such as the CCW heat exchangers, turbine lube oil and hydrogen coolers. The system transported clean fluid at or above atmospheric pressure which precluded contamination from entering the pipe. Operating records and the HSA have documented no occurrences of radioactive contamination associated with this system.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of -9 dpm/100 cm^2 and a maximum value of 310 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Non-Impacted system.

HSA Events: None

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Survey Area Classification

Area ID #: 899042
Survey Area: Radwaste System Piping

Operating History: This system transported liquid radioactive waste through the waste processing
system. This system was designed to be contaminated. Operating records and the HSA support its
status as radioactively contaminated system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping
which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior
showed a mean gross activity level of 49,700,000 dpm/100 cm^2 and a maximum value of 211,000,000
dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported,
the system was determined to be a Class 1 system.

HSA Events: N/A Radioactive by design.

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Survey Area Classification

Area ID #: 899043
Survey Area: Service Air System Piping

Operating History: This system provided compressed air throughout the site for powering air-operated tools and regenerating demineralizers. This system was designed to be clean. However, the system piping became contaminated due to various primary to secondary system leaks. Operating records and the HSA document several occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of -5 dpm/100 cm^2 and a maximum value of 1,740 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

HSA Events: HSA Report pg. 63.

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Survey Area Classification

Area ID #: 899044
Survey Area: Spent Fuel Cooling System Piping

Operating History: This system transported radioactive fuel pool water through the coolers and clean up demineralizers. This system was designed to be contaminated. Operating records and the HSA support its status as radioactively contaminated system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 5,190,000 dpm/100 cm^2 and a maximum value of 16,500,000 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 1 system.

HSA Events: N/A Radioactive by design.

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Survey Area Classification

Area ID #: 899045
Survey Area: Site Reservoir System Piping

Operating History: This system provided the water inventory in Rancho Seco Lake for plant operations, fire protection and accident mitigation and transported water from the lake to the site. This system was designed to be clean. It operated at or above atmospheric pressure and transported clean water. Operating records and the HSA document no occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 6 dpm/100 cm^2 and a maximum value of 441 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and lack of gross activity reported, the system was determined to be a Non-Impacted system.

HSA Events: None

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Survey Area Classification

Area ID #: 899047
Survey Area: Service Water System Piping

Operating History: This system filtered and conditioned untreated raw water from the makeup system and transported water to various non-safety coolers and utility stations throughout the site. This system was designed to be clean. Operating records and the HSA document no occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 187 dpm/100 cm^2 and a maximum value of 2,700 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

HSA Events: None

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Survey Area Classification

Area ID #: 899050
Survey Area: Waste Gas System Piping

Operating History: This system transported radioactive gas from various systems to the gas decay tanks then through the filters to the gaseous effluent release point. This system was designed to be contaminated. Operating records and the HSA support its status as radioactively contaminated system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 528 dpm/100 cm^2 and a maximum value of 3,665 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 3 system.

HSA Events: N/A Radioactive by design.

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Survey Area Classification

Area ID #: 899051
Survey Area: Carbon Dioxide System Piping

Operating History: This system transported liquid carbon dioxide for fire protection in areas of the site in which water could not be used. This system was designed to be clean. Operating records and the HSA document no occurrences of radioactive contamination associated with this system piping. In addition, the system was maintained at or above atmospheric pressure which prevented any contamination from entering the system.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the absence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 8,585 dpm/100 cm^2 and a maximum value of 23,654 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 2 system.

HSA Events: None

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Survey Area Classification

Area ID #: 899052
Survey Area: Acid Waste System Piping

Operating History: This system transported radioactive waste water. This system was designed to be contaminated. Operating records and the HSA support its status as radioactively contaminated system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 2,450,000 dpm/100 cm^2 and a maximum value of 74,600,000 dpm/100 cm^2. Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 1 system.

HSA Events: N/A Radioactive by design.

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Attachment 8.2

Initial Survey Design Sigma Values

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FSS SURVEY DESIGN SIGMA

(Based on Site Characterization Data)

Table 5-4A

Survey Unit Classification – General Open Land Areas

Survey Unit ID #	Survey Area	Initial Total Sigma pCi/g, Cs-137	Adjusted Sigma* pCi/g, Cs-137	Classification
100000	Plant Effluent Water Course	14.7	9.84	Class 2
100100	Area Around Effluent Path	0.14	0.14	Non-Impacted
200000	South Plant Outfall	0.15	0.15	Class 3
300000	South Non-Impacted Area	0.19	0.19	Non-Impacted
400000	South East Non-Impacted Area	0.17	0.17	Non-Impacted
500000	North East Non-Impacted Area (excluding parking lot and warehouse)	0.16	0.16	Non-Impacted
600000	North Non-Impacted Area (excluding rail line)	0.10	0.10	Non-Impacted
700000	West Non-Impacted Area (excluding ISFSI)	0.12	0.12	Non-Impacted

* Assumes survey units are remediated to the DCGL

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Table 5-4B
Survey Unit Classification – Site Surface Soils

Survey Unit ID #	Survey Area	Initial Total Sigma pCi/g, Cs-137	Adjusted Sigma* pCi/g, Cs-137	Classification
800100	Industrial Area Soils (4 quadrants)	0.042	0.42	Class 3
	Includes the following:			
501004	Extended Parking/Storage Area	0.058	0.058	Class 3
800001	Folsom Canal Intake	0.012	0.012	Class 3
800002	Helicopter Landing Pad	0.027	0.027	Class 3
800003	South Scrap Yard	0.103	0.103	Class 3
800004	Central N-S Transit/South	0.01	0.01	Class 3
800005	South E-W Transit Zone	0.042	0.042	Class 3
800006	Storm Drain Buffer Zone	0.047	0.047	Class 3
800007	West Industrial Area	0.034	0.034	Class 3
800008	South Support Structures Yard	0.041	0.041	Class 3
800009	South East Industrial Area	0.019	0.019	Class 3
800012	Industrial Area Waste Storage Buffer	0.010	0.01	Class 3
800013	Central Industrial Area	0.030	0.03	Class 3
800014	North Industrial Area Boundary	0.007	0.007	Class 3
	Following to be managed on unit specific basis			
803002	Quonset-Hut Yard	0.030	0.03	Class 3
806000	East/West Spray Ponds	0.026	0.026	Class 3
834002	Rail Line	0.018	0.018	Class 3
839000	Transformer Yard	0.432	0.432	Class 3
843002	Barrel Farm Buffer	1.460	1.46	Class 1
848000	Retention Basins Buffer	0.047	0.047	Class 3
851000	Switchgear Yard	0.008	0.008	Class 3
810001	Tank Farm	10.7	10.7	Class 1
826015	Gap – SFP/DG rm	0.006	0.006	Class 2
837000	RHUT Area	9.83	9.83	Class 1

* Assumes survey units are remediated to the DCGL

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Table 5-4C

Survey Unit Classification – Paved Surfaces and Foundation Pads

Survey Unit ID #	Survey Area	Initial Total Sigma dpm/100 cm^2	Adjusted Sigma* dpm/100 cm^2	Classification @
800200	Industrial Area Pavement (Includes the following):	513	513	Class 3
501003	Upper/Outer Yard	212	212	Class 3
501004	Extended Parking/Laydown	255	255	Class 3
501005	Access Road	200	200	Class 3
800001,2	Helicopter Pad Area	207	207	Class 3
800003	South Scrap Yard	255	255	Class 3
800004	Central N-S Transit/South	102	102	Class 3
800005	South E-W Transit/East	234	234	Class 3
800007	West Industrial Area	496	496	Class 3
800008	South Support Structures Yard	478	478	Class 3
800009	South East Industrial Area	440	440	Class 3
800010	IA Central Yard	745	745	Class 3
800011	IA Central E-W Corridor	1,256	1,256	Class 2
800012	IA Waste Storage Buffer	N/A (no pavement)	N/A	N/A
800013	Central IA Area	496	496	Class 3
800014	North IA Boundary	147	147	Class 3
803001	Q-Hut Pad	234	234	Class 3
806000	Area Around Spray Ponds	207	231/207 **	Class 3
808003	Cooling Tower Basin Buffer	3,896	3,896	Class 2
809001	Sewer Plant	158	158	Class 3
818001	Electrical Fab Shop Pad	Incorporated in 800008	N/A	
819000	Bulk Waste Bld	7,356	2512	Class 2
820001	L&D Building Pad	Incorporated in 800008	N/A	
823000	Intake Pump Structure	667	667	Class 3
824000	PCW Intake	397	397	Class 2
826025	N Laydown	250	250	Class 3
827001	Tool Room Pad	Incorporated in 800008	N/A	
828001	GRS Warehouse	Incorporated in 800008	N/A	
834000	Rail Line	1470	1470	Class 1
836001	Aux Boiler Pad	1,109	1109	Class 2

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	Table 5-4C Survey Unit Classification – Paved Surfaces and Foundation Pads (continued)			
Survey Unit ID #	Survey Area	Initial Total Sigma dpm/100 cm ^{2}	Adjusted Sigma* dpm/100 cm ^{2}	Classification @
838001	Fab Shop Pad	Incorporated in 800008	N/A	
839000	Transformer Pad	Incorporated in 800010	N/A	
842000	Warehouse C Pad	Incorporated in 800008	N/A	
843002	Barrel Farm	3,637	3637	Class 1
848000	Retention Basins	1,294	1294	Class 1,2,3
851000	Switchgear Yard	397	397	Class 3
853001	NPS Fab Shop Pad	Incorporated in 800011	N/A	

* Assumes survey units are remediated to the DCGL
** Spray pond basin/paved perimeter
@ Areas with more than one classification represent the range of classification throughout the area or the Interior/Exterior classification. Only a single class will apply to a Survey unit.

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Table 5-4D

Survey Area Characterization-Structures

Survey Unit ID #	Survey Area	Initial Total Sigma dpm/100 cm^{2**}	Adjusted Sigma* dpm/100 cm^{2**}	Classification [@]
501001	Receiving Warehouse	397/65	397/65	3/3
501002	Hazmat Warehouse	533/147	533/147	3/3
804001	PAP Building	500/196	500/196	3/3
805001	Admin. Building	451/712	451/712	3/3
808001	E/W Cool Tower Basin	685	685	2
809001	Sewer Plant	158	158	3
811000	Reactor Bldg. −27'	2,593,910	31,920	1
811000	Reactor Bldg. Grade	238,479	33,040	1
811000	Reactor Bldg. +40'	67,358	3,892	1
811000	Reactor Bldg. +60'	22,086	16,178	1
811000	Reactor Bldg. Ext/Roof	119	119	3
812000	Spent Fuel Bldg Pool	56,500,000	12,246	1
812000	Spent Fuel Bldg. +40'	4,631	4,631	2
812000	Spent Fuel Bldg. Exterior	747	747	2
812000	Spent Fuel Bldg. Roof	408	408	3
813000	Auxiliary Bldg. −47'	740,452	9,976	1
813000	Auxiliary Bldg. −29'	1,200,000	10,204	1
813000	Auxiliary Bldg. −20'	920,181	12,035	1,2
813000	Auxiliary Bldg. Grade	1,046,734	6,935	1
813000	Auxiliary Bldg. +20'	309,414	5,461	1
813000	Auxiliary Bldg. +40'	3,627	3,627	2
813000	Auxiliary Bldg. Roof	136	136	3
813000	Auxiliary Bldg. Exterior	342	342	3
814000	T&R Bldg	500/435	500/435	3/3
815000	Nuclear Svc Elect Bldg.	353/261	353/261	3/3
816000	Central Alarm Station Bldg	364/234	364/234	3/3
817000	TDI Diesel Gen Bldg	647/141	647/141	3/3
821000	Water Treat Bldg.	266/511	266/511	3/3
822000	Chlorine Bldg.	438/1,032	438/1,032	3/3
826000	Turbine Bldg -7'	5,990	3,130	1,2
826000	Turbine Bldg Grade	1,316	1,316	2
826000	Turbine Bldg Mezzanine	402	402	3
826000	Turbine Bldg. +40' & Ext.	277/1,723	277/1,723	3/3
831000	Microwave Bldg.	1,639/5,210	1,639/5,210	3/2
833000	Warehouse B	807/10,064	807/10,064	3/2

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Table 5-4D

Survey Area Characterization-Structures

(continued)

Survey Unit ID #	Survey Area	Initial Total Sigma dpm/100 cm ^{2**}	Adjusted Sigma* dpm/100 cm ^{2**}	Classification @
840000	Warehouse A	495/511	495/511	3/3
850000	Solidification Pad/Wall	57,832	9,233	1
851000	Switchyard Control Bldg.	342/196	342/196	3/3
852000	Machine Shop	288/217	288/217	3/3
856000	Secondary Alarm Station	1,205/4,317	1,205/4,317	3/3

*Assumes survey units are remediated to the DCGL

** (Internal/External)

@ Areas with more than one classification represent the range of classification throughout the area or the Interior/Exterior classification. Only a single class will apply to a Survey unit.

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Table 5-4E
Survey Area Characterization – Remaining Buried and Embedded Pipe

Survey Unit ID #	Survey Area	Initial Total Sigma dpm/100 cm^2	Adjusted Sigma* dpm/100 cm^2	Classification
899002	Aux Feedwater Piping	207	207	3
899005	Clean Drain System, Storm Drain Non-Discharge	392	392	3
899006	Component Cooling Water System Piping	4,174	4,174	3
899007	Clean Drain System Piping - Turbine	93,519	23,464	1
899008	Clean Drain System Piping - Sewer	4	4	NI
899009	Clean Drain System Piping – Storm Drain/Liquid Disch	431	431	1
899010	Diesel Fuel Oil System Piping	4,984	4,984	NI
899011	Decay Heat System Piping	630,324	15,498	1
899017	Fire Protection Water System Piping	815	815	NI
899025	Instrument Air System Piping	3,793	3,793	NI
899028	Main Condenser Makeup	1,089	1,089	3
899029	Main Circulating Water System Piping	99	99	3
899032	Nitrogen Gas System Piping	9,677	9,677	2
899034	Nuclear Service Raw Water System Piping	157	984	3
899035	Nuclear Service Water Piping	125	125	3
899036	Plant Cooling Water System Piping	153	153	NI
899040	Reactor Coolant Drain System	TBD	TBD	1
899042	Radwaste System Piping	66,200,000	100,000	1
899043	Service Air System Piping	964	964	3
899044	Spent Fuel Cooling System Piping	4,730,000	100,000	1
899045	Site Reservoir System	232	232	NI
899047	Service Water System Piping	1,992	1,992	3
899050	Waste Gas System Piping	2,977	2,977	3
899051	Carbon Dioxide System	8,930	8,930	2
899052	Acid Waste System	13,000	13,000	1

*Assumes survey units are remediated to the DCGL