U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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Licensee:	Consumers Energy Company
Facility:	Palisades Nuclear Generating Plant
Location:	27780 Blue Star Memorial Highway Covert, MI 49043-9530
Dates:	October 20-22 and 25-26, 1999
Inspectors:	D. Nelson, Radiation Specialist J. House, Senior Radiation Specialist
Approved by:	Gary L. Shear, Chief, Plant Support Branch Division of Reactor Safety

EXECUTIVE SUMMARY

Palisades Nuclear Plant
NRC Inspection Report 50-255/99016(DRS)

This routine, announced inspection evaluated the effectiveness of the licensee's radiation protection program during the early stages of the 1999 refueling outage (REFOUT99). The inspection focused on dose management, implementation of the as-low-as-is-reasonably-achievable (ALARA) program, the control and oversight of radiological work, radiation worker (radworker) performance and source term reduction initiatives. The following conclusions were made in these areas:

Plant Support

- The Chemical and Radiological Services (C&RS) department was actively involved in the work planning process and aggressively maintained an effective interface with the work control organizations. Outage dose was maintained reasonably low given the overall scope of work and was attributed to aggressive dose management practices, sound ALARA initiatives and generally good oversight of radiological work (Section R1.1).

- The ALARA program was generally implemented effectively, as ALARA plans were well developed and sufficiently thorough. ALARA initiatives and associated engineering controls were properly established, and efforts to reduce dose, prevent the spread and intake of radioactive materials and limit personnel contamination events were successful (Section R1.2).

- Radiation protection (RP) staff oversight and control of radiological work and management of RP resources for the outage was effective. Some communication problems arose but were identified and addressed by the licensee without significant dose consequence. Containment lead radiation protection technicians (RPTs) did not always challenge workers sufficiently to meet RP management expectations (Section R1.3).

- Source term reduction strategies continued to be implemented effectively. The licensee's source term and dose reduction evaluation was well planned and the strategies including the zinc injection program were reducing dose rates (Section R1.4).

- Radworker performance was good given the relative inexperience of the craft work force. The C&RS staff addressed radworker performance problems effectively (Section R4.1).

- Radiological postings were well maintained and accurately reflected the area radiological conditions. High and locked high radiation areas were controlled consistent with station procedures and regulatory requirements. Effective contamination control practices were in use and radiological controls for work activities were as prescribed by the ALARA plan and RWP (Section R4.2).

- Outage staffing and training for the RP program were generally effective. The selection process for contractor radiation protection technicians (CRPTs) was rigorous, and the training of contract RP staff adequately prepared workers for assigned outage tasks (Section R5.1).

- The RP management structure provided oversight that contributed to the effectiveness of the RP outage program (Section R6.1).

- Nuclear Performance Assessment Department (NPAD) assessment activities during the early stages of REFOUT99 appeared to be well planned and executed (Section R7.1).

Report Details

IV. Plant Support

R1 Chemistry and Radiological Services (C&RS) Controls

R1.1 Radiological Planning for the 1999 Refueling Outage (REFOUT99)

a. Inspection Scope (83750)

The Chemistry and Radiological Services (C&RS) department's radiological work planning and scheduling, and as-low-as-is-reasonably-achievable (ALARA) planning for REFOUT99 was discussed in Inspection Report No. 50-255/99014(DRS). To determine the effectiveness of C&RS planning for REFOUT99, the inspection consisted of discussions with C&RS management and members of the C&RS planning staff, reviews of ongoing and completed outage work activities and observations of work control processes throughout the station.

b. Observations and Findings

Inspection Report No. 50-255/99014(DRS) concluded that the C&RS work planners and ALARA planners had been effectively integrated into the outage planning organization to provide radiation protection (RP) involvement in the outage planning process. The inspectors noted that effective integration continued into the outage. During the outage, the C&RS ALARA coordinator was assigned responsibility for providing the radiological interface between the C&RS department and the work control and outage coordinator organizations to ensure that appropriate radiological involvement in the outage was maintained. That interface included attending daily work and emergent work meetings and communicating regularly with the outage coordination and work control centers to ensure that radiological information was exchanged, and that the radiological impact of outage activities was considered. The ALARA planners who were assigned to specific areas (steam generators, primary coolant pumps, etc.) also provided an interface between the work groups and the C&RS department. If problems or emergent/rework issues arose, the work control organization along with the ALARA coordinator and area lead radiation protection technicians (RPTs) worked together to ensure radiological aspects of the job were evaluated prior to initiation.

The licensee's dose goal for REFOUT99 was 150 rem, a challenging goal given the station's historical outage dose performance and the scope of the outage's radiological work activities, which included upgrading three of the four Primary Coolant Pumps (PCP) seals, replacement of the PCP P-50D motor and repair of the leaking PCP P-50A casing. The outage dose goal for REFOUT99 was significantly less than the dose expenditures for the 1998 refueling outage which expended approximately 190 rem for work of lesser scope.

Radiologically significant outage activities included in service inspection (ISI) work (7.6 rem), scaffolding installation and removal (15.5 rem), steam generator inspection and maintenance (31.3 rem), primary coolant pump maintenance (13.8 rem), reactor disassembly/reassembly and refuel floor support activities (69.4 rem).

For the first 10 days of the outage, the total dose expended was 79 rem, which tracked below the licensee's estimated dose for that point in the outage. However, problems encountered during letdown and the removal of the reactor head delayed refueling activities which contributed to the lower dose. In general, work activities were tracking at or slightly below dose estimates. Work on the steam generators was tracking significantly below the 31.3 rem dose estimate due, in part, to reductions in primary system source-term (Section R1.4) while dose expended for scaffolding was tracking significantly above the 15.5 rem dose budget due to the dismantling and rebuilding of some scaffolding. Problems with the scaffolding program were addressed in CPAL9901979, "Scaffold Rework "A" Steam Generator". Even with the delays and the unanticipated dose from scaffolding activities, the licensee projected the total outage dose to be under the original 150 rem estimate.

The inspectors found that, in general, management's aggressive dose management practices, the ALARA and source term reduction initiatives implemented before and during the outage, and the RP staff's control and oversight of radiological work significantly benefitted dose performance.

c. Conclusions

The C&RS department was actively involved in the work planning process and aggressively maintained an effective interface with the work control organizations. Outage dose was maintained reasonably low given the overall scope of work and was attributed to aggressive dose management practices, sound ALARA initiatives and generally good oversight of radiological work.

R1.2 ALARA Program Implementation

a. Inspection Scope (83750)

The effectiveness of the licensee's radiological engineering controls and work practices was evaluated along with the results of efforts to reduce dose and implement the ALARA program for REFOUT99. The inspectors interviewed radiation workers (radworkers) and members of the RP staff, reviewed ALARA job evaluations, radiation work permits (RWPs) and applicable procedures, and observed ongoing work.

b. Observations and Findings

ALARA job plans and associated evaluations were generally thorough and addressed the potential job hazards. Lessons learned and industry experiences were used in ALARA job planning as was evidenced by evaluating problems encountered during

installation of the steam generator (S/G) nozzle dams during the station's previous outage and modifying the work plans to shorten stay time in elevated radiation areas and thus reduce dose.

Improved work planning for the pressurizer man way removal which changed the way that the job was performed resulted in a reduced dose of approximately 53 millirem. The inspectors noted that ALARA briefings for complex or high risk activities listed any specialized training required for workers, RP plans for minimizing dose, listed potential overexposure hazards, and described how decontamination of work areas should be accomplished. For large jobs such as steam generator work, the licensee used experienced work crews and provided mock up training from a vendor.

Effective engineering controls were employed to reduce the spread of airborne contamination. This included surface coatings and high efficiency particulate air (HEPA) filter equipped portable ventilation systems with charcoal adsorption capability. Temporary shielding had been installed to reduce general area dose rates. Remote audio/visual and radiological monitoring systems were used effectively to observe work and monitor dose/dose rates in containment. This was evidenced during the reactor head lift as RP management had limited personnel in this work area to only those persons essential for the job. Remote monitoring stations were also located outside of the radiologically protected area (RPA) and were part of the emphasis on dose reduction by the RP staff.

The inspectors attended pre-job briefings for work activities in containment and noted that the briefings provided the work crews with radiation protection information necessary to safely complete their jobs. Dosimetry placement, remote monitoring and access control to work areas such as steam generator platforms were discussed. Because the work crews were experienced and had undergone mock-up training, the ALARA briefings focused on radiation protection activities and the workers could more easily relate the RP information to their particular job responsibilities. Job safety was emphasized and workers were reminded to "check each other" during the evolution. The inspectors noted that the radiological engineering supervisor that provided the briefing was very knowledgeable of the area work environment and the planned work evolution.

c. Conclusions

The ALARA program was generally implemented effectively, as ALARA plans were well developed and sufficiently thorough. ALARA initiatives and associated engineering controls were properly established, and efforts to reduce dose, prevent the spread and intake of radioactive materials and limit personnel contamination events were successful.

R1.3 Control and Oversight of Radiological Work

a. Inspection Scope (83750)

The inspectors observed the C&RS staff's control and oversight of radiological work throughout the station and attended several Duty Health Physicist (HP) and C&RS shift turnover meetings.

b. Observations and Findings

Radiological work oversight and job coverage was effective as evidenced by proper implementation of ALARA initiatives, very good contamination control, adequate radiation worker (radworker) practices and the lack of any significant radiological work related problems. Radiation protection technicians (RPTs) were routinely observed properly controlling jobs and coaching workers, and RP control points were used effectively in a variety of station locations to better communicate with work crews and orchestrate the work force.

C&RS shift turnover meetings were conducted by the Duty HPs or C&RS management twice each day, effectively conveyed the status of radiological work and clearly established staff priorities for dose reduction and work control. Job activities in each defined work area of the station were discussed during the meetings by the Duty HPs or C&RS management and turnover issues and specific responsibilities were well defined for the next shift.

The inspectors noted that RPTs in the field routinely questioned workers regarding worker knowledge of radiological work conditions. However, lead RPTs manning the Containment Building equipment hatch access control point were not challenging workers to the extent expected by C&RS management. Also, some communication equipment problems arose and this caused delays in some work activities. These communication problems, however, did not result in significant dose consequences.

c. Conclusions

Radiation protection staff oversight and control of radiological work and management of RP resources for the outage was effective. Some communication problems arose but were identified and addressed by the licensee without significant dose consequence. Containment lead RPTs did not always challenge workers sufficiently to meet RP management expectations.

R1.4 Source Term Reduction Program

a. Inspection Scope (83750)

The inspectors reviewed the licensee's plans for area dose rate reduction in radiologically protected areas (RPAs) and evaluated the source term reduction program. The inspectors interviewed RP and chemistry supervisors and the source term reduction manager, reviewed source term data and performed plant walk-downs. The radiological

impact of the zinc injection project, which was started during this fuel cycle (April 1999), was also reviewed.

b. Observations and Findings

The licensee continued to implement its source term reduction program. Although worker dose had fallen in recent years, licensee management realized that it would be difficult to meet the INPO 3 year average goal of 110 person-rem for the year 2000. An evaluation of dose reduction strategies was documented in a report entitled "Palisades Plant Dose Reduction Evaluation". The report contained a comparison of the licensee's facility with other plants of similar design and various ages. The two major source term reduction methods, chemical decontamination and zinc injection, were compared using cost, person-rem reduction and long term consequences. Based on the limited dose reduction data available from zinc injection at PWRs and the more extensive results from zinc injection at BWRs, licensee management concluded that zinc injection would be pursued and that chemical decontamination should be evaluated further only in the event of a major job to be performed in specific higher dose areas.

The licensee implemented zinc injection during this operating cycle (April 1999) in order to reduce dose from cobalt-58 and cobalt-60. Depleted zinc was used, which is much more costly but has virtually no zinc-64 that activates in a neutron flux to zinc 65 which has a half life of 244 days and emits 1115.5 kilo-electron volt (KeV) gamma radiation during its decay process. Although the use of normal zinc containing zinc 64 has been shown to reduce the source term, the use of depleted zinc has a greater impact on source term reduction because no radioactive zinc-65 is produced. The preliminary results were encouraging as evidenced by the removal of approximately 500 curies of cobalts 58 and 60 during the shutdown process based on radiochemical data, and reduced dose rates encountered during initiation of steam generator work which were approximately 50%-60% of the dose rates seen in similar locations during previous outages.

In addition to zinc injection, the dose reduction evaluation report contained the following additional recommendations for reducing dose/source term:

Installation of a 0.1 micron size filter element in the chemical volume control system (CVCS) to remove smaller size crud particles and thus reduce the primary coolant radioactivity.

Consider an increased use of shielding, especially around the reactor head during refueling.

Continue efforts to increase dose reduction awareness to the plant staff. Dose consequences must be considered for all work in the RPA.

Continue to evaluate technological improvements for dose reduction such as increased use of video and audio equipment for job monitoring to reduce the numbers of workers required and increased reliance on remote monitoring dosimetry.

Approximately 96,000 pounds of temporary shielding was used for the outage which represented an approximate 10% increase over the previous outage. Additional shielding was installed around the reactor head, however, this project was not completely successful as most of the shielding had to be removed in order not to exceed the administrative lifting capacity of the crane.

During the shutdown process, the licensee operated double letdown (two reactor coolant pumps operating instead of one) for 72 hours following the hydrogen peroxide addition. This additional processing of reactor coolant through the CVCS provided for increased crud removal.

c. Conclusions

Source term reduction strategies continued to be implemented effectively. The licensee's source term and dose reduction evaluation was well planned and the strategies including the zinc injection program were reducing dose rates.

R4 Staff Knowledge and Performance in C&RS

R4.1 Evaluation of Radiation Worker (Radworker) Performance

a. Inspection Scope (83750)

Radworker performance during the refueling outage was evaluated through direct observation of work practices, discussions with work crews and C&RS staff, and reviews of selected Condition Reports (CRs).

b. Observations and Findings

The inspectors observed work practices in the Containment and Auxiliary Buildings and found that radworker performance was generally adequate and consistent. During the outage, C&RS management posted a coach at the Containment Building egress points to ensure that protective clothing was removed properly. During interviews, the coaches indicated that workers generally had been properly removing their protective clothing, however, some workers needed to be coached on the proper sequence for removing their rubber gloves. Palisades required that all workers in containment wear double rubber gloves. As this was not a common practice at other plants, some workers were confused about the proper method for removing them. When questioned by the inspectors, workers generally demonstrated adequate knowledge of their radiation work permit (RWP) requirements including electronic dosimetry alarm setpoints and were aware of their radiological work conditions. The inspectors saw no instances of workers loitering in work areas. However, a few instances of poor radworker practices were observed during the tours of the Containment Building. One worker was observed wearing only one set of rubber gloves and another had failed to wear the lanyard inside his protective clothing. C&RS management recognized these minor radworker problems. During the inspection C&RS management met with the staff and discussed the need for coaching workers in the field and emphasized the need for worker and C&RS staff self checking. Only four Personnel Contamination Incidents (PCI) were

reported during the first 10 days of the outage. This exceeded the licensee's goal for that point in the outage which indicated that the licensee's contamination control program was aggressive.

The inspectors reviewed selected condition reports (CRs) generated during the first 10 days of the outage to determine the scope and depth of radiation protection problems identified by the licensee. The review disclosed no negative trends or significant radworker performance problems. Most worker performance problems were minor and were caused by inattention to details. Corrective actions taken by the RP staff were timely and appeared appropriate. The inspectors did observe C&RS management directing staff to initiate CRs. When asked about this, the C&RS Manager indicated that the threshold for using CRs to identify deficiencies continued to be lowered and that coaching was necessary to encourage all employees to be active participants in the CR program. During interviews, RPTs indicated that they would not be hesitant in to initiate CRs. Some, however, indicated that they would first discuss the matter with management before initiating a CR.

c. Conclusions

Radworker performance was good given the relative inexperience of the craft work force. The C&RS staff addressed radworker performance problems effectively.

R4.2 Plant Walkdowns and Other Observations

a. Inspection Scope (83750)

The inspectors conducted several walkdowns of the Containment and Auxiliary Buildings during the inspection and reviewed radiological posting and labeling, housekeeping and work control practices.

b. Observations and Findings

Radiological postings for the Containment and Auxiliary Buildings were well maintained. Radiation and high radiation area postings accurately reflected radiological conditions, and high and locked high radiation areas were controlled consistent with station procedures and regulatory requirements. Contamination control practices and radiological housekeeping were generally good in both buildings. Materials such as hoses, chains, tools, equipment, storage boxes and other items were typically segregated into designated storage areas. Contaminated items were bagged, and properly labeled as required. The inspectors observed numerous small pieces of plastic on the floor of west safeguards that fell from a disintegrating section of plastic mesh in the overhead area. Some of this material had fallen into contaminated zones. Within an hour of reporting the finding the material had been removed.

The inspectors noted that the RPA access point and the Containment Building equipment hatch control point were rarely congested with workers, and that workers appeared to be knowledgeable of their work assignments and locations. During previous outages there was only one RP desk at the RPA access point and, at times,

the area surrounding the desk was noisy and congested. Prior to this outage, C&RS management changed the physical layout of the RPA access point to include separate desks for the Containment Building, the Auxiliary Building and the ALARA group. The Duty HP was also stationed at the Containment Building desk to interview all workers entering the Containment Building and to notify the lead RPT at the Containment Building equipment hatch that the workers would be entering containment. These changes significantly reduced congestion at both the RPA and containment access points.

c. Conclusions

Radiological postings were well maintained and accurately reflected the area radiological conditions. High and locked high radiation areas were controlled consistent with station procedures and regulatory requirements. Effective contamination control practices were in use and radiological controls for work activities were as prescribed by the ALARA plan and RWP.

R5 Staff Training and Qualifications in C&RS

R5.1 Outage Staffing, Training and Qualifications for the Radiation Protection Organization

a. Inspection Scope (83750)

The inspectors reviewed the outage staffing plan for the RP program and the qualifications and training of contract RP staff. The inspectors interviewed radiation protection management and discussed the training program with licensee's staff.

b. Observations and Findings

The licensee supplemented the in-house RP staff with 47 contractor RPTs (CRPTs) which consisted of 44 senior RPTs and 3 junior RPTs. Five additional senior RPTs were obtained from a utility alliance.

Industry standardized qualification criteria was established for senior and junior CRPTs. Those CRPTS who were Certified Health Physicists or registered with the National Registry of Radiation Protection Technicians (NRRPT) were not required to take the standardized Northeast Utilities Health Physics Theory Exam. Senior CRPTs who were required to have taken the test needed a score of at least 80% and junior CRPTs needed a score of 70% or better. As part of the training process, all RP personnel were required to attend the licensee's "Back To Basics" radiation protection training. This training emphasized practical, job oriented skills and focused on areas such as pre-job activities, dose reduction, contamination control and high radiation/locked high radiation area work. Managements expectations for outage performance was discussed and included those factors that contributed to dose during the last refueling outage.

c. Conclusions

Outage staffing and training for the RP program was generally effective. The selection process for CRPTs was rigorous, and the training of contract RP staff adequately prepared workers for assigned outage tasks.

R6 C&RS Organization and Administration

R6.1 Outage Radiation Protection Organization

a. Inspection Scope (83750)

The inspectors reviewed the C&RS outage organization and evaluated its effectiveness in controlling radiological work and implementing the outage RP program.

b. Observations and Findings

Since the last refueling outage, there have been major changes in C&RS management. In the fall of 1998 a new C&RS Manager was appointed, and in the spring of 1999 a new C&RS Operations Supervisor joined the management team. Both new managers have significant industry radiation safety experience and the new Operations Supervisor is a Certified Health Physicist. Prior to REFOUT99, the new manager and supervisor implemented a number of initiatives to improve C&RS performance during the outage. Those initiatives included changing the physical layout of the RPA access point to include Containment Building and ALARA desks, clarifying Radiation protection staff responsibilities, and meeting with contractors before the outage to make the contractors more accountable for their radworker practices and dose.

For REFOUT99 the C&RS outage organization was divided into two twelve-hour shifts. Each shift included a Duty HP with the C&RS Manager or Radiological Services Supervisor managing day shift activities. Work oversight was divided by plant locations which included the Auxiliary Building and the Containment Building. The Duty HP held overall responsibility for ensuring procedure and safety compliance for RP operations while lead RPTs for the various areas provided technical expertise for their area. In addition, lead RPTs were assigned to specific plant locations and were responsible for RP oversight in each designated work zone. For all dose significant projects, ALARA planners were designated area lead RPTs and were responsible for ALARA job planning and implementation of ALARA initiatives for that project. During plant walk-downs, the inspectors noted that the area lead RPTs were usually in the field observing work activities or at the ALARA access point desk giving pre-job briefings or providing assistance to the staff. The inspectors found that the outage organizational scheme promoted ownership of radiological work and helped ensure that appropriate work oversight existed.

c. Conclusions

The RP management structure provided oversight that contributed to the effectiveness of the RP outage program.

R7 NPAD Assessments of RP Activities

R7.1 Nuclear Performance Assessment Department (NPAD) Activities During the Outage

a. Inspection Scope (83750)

The inspectors reviewed the NPAD RFOUT99 Assessment Plan and reviewed a number of field monitoring reports written since the beginning of the outage. The inspectors also interviewed auditors responsible for NPAD's oversight of the radiation protection program during the outage.

b. Observations and Findings

The Assessment Plan described in detail the areas that would be evaluated during the outage and included performance based observations of radworker activities to assess radworker practices and conduct in the RPA. The inspectors noted during their review of the field monitor reports that the auditors had observed dress-out activities at the Containment Building equipment hatch egress point, observed work activities in the Containment and Auxiliary Buildings, observed RPT training sessions, and conducted walk through tours of the Auxiliary Building. Each of these activities were in compliance with the Assessment Plan and demonstrated that NPAD auditors were actively assessing radiation protection activities during the early stages of REFOUT99.

c. Conclusions

NPAD assessment activities during the early stages of REFOUT99 appeared to be well planned and executed.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to licensee management and staff at the conclusion of the site inspection on October 26, 1999. The licensee acknowledged the inspection findings and identified no proprietary information.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

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T. Brown, C&RS, Supervisor
D. Burdette, NPAD
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NRC

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INSPECTION PROCEDURES USED

IP 83750	Occupational Radiation Exposure

ITEMS OPENED AND CLOSED

None

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
C&RSD	Chemical and Radiological Services Department
CR	Condition Report
CRPT	Contract Radiation Protection Technician
CVCS	Chemical Volume Control System
HEPA	High Efficiency Particulate Air
HP	Health Physicist
ISI	In-Service-Inspection
KeV	Kilo electron Volt
NPAD	Nuclear Performance Assessment Department
NRRPT	National Registry of Radiation Protection Technicians
OCC	Outage Coordination Center
PCI	Personnel Contamination Incident
PCP	Primary Coolant Pump
QC	Quality Control
Radworker	Radiation Worker
RP	Radiation Protection
RPA	Radiologically Protected Area
RPM	Radiation Protection Manager
RPT	Radiation Protection Technician
RWP	Radiation Work Permit
S/G	Steam Generator
TEDE	Total Effective Dose Equivalent

PARTIAL LIST OF DOCUMENTS REVIEWED

Station Procedures

HP 2.8 (Rev 11)	Radiological Services Response to Unusual Radiological Occurrences

RWPs

RWP # 5004 (Rev 0)	Containment Tours
RWP # 0005 (Rev 0)	Aux Building Tours
RWP # 5150 (Rev 0)	Install and Remove Nozzle Dams in the Steam Generators
RWP # 5151 (Rev 0)	Remove and Reinstall Primary Man Way Covers.

Condition Reports

CPAL9901979	Scaffold Rework "A" Steam Generator
CPAL9901942	Unposted High Rad Area Discovered Between Clean Waste Receiver Tanks T-64C and T-64D
CPAL9901946	Poor Radworker Practices
CPAL9901975	Survey Identified General Area Dose Rates of 2.5 and 4.0 Rem/hr Upstream of MV-PC1024A and MV-PC1027A Respectively
CPAL9901957	Investigation Of ED Dose Rate Alarm Locates a High Radiation Area
CPAL9901972	Radiation Safety Tech not in Compliance with RWP Dress Requirements (Only one set of gloves)
CPAL9901994	Worker Chewing Gum Inside RCA
CPAL9902041	Radworker Exits Contamination Area Without Removing Anti-Contamination Clothing

Other Documents

REFOUT99 Contractor Dose Performance Data, October 25, 1999
REFOUT99 Radiation Safety Metrics
Palisades Nuclear Plant 1999 Refueling Outage Handbook
Palisades Nuclear Plant "All Radiation Work Permits" Summary Report, October 21, 1999
Printout of C&RSD Related Condition Reports for REFOUT99
1999 Radiation Safety Outage Guide
Palisades REFOUT99 Schedule
NPAD REFOUT99 Assessment Plan, Progress Report
NPAD Field Monitoring Reports: FM-P-99-117, FM-P-99-112, FM-P-99-114
Pre-job Briefing Checklist for RWP 990005, October 16, 1999.
Pre-job Briefing Checklist for RWP 995150, October 13, 1999
Pre-job Briefing Checklist for RWP 995151, October 14, 1999
Radiological Safety and Chemistry Training Program "Back to Basics", September 3, 1999
Palisades Plant Dose Reduction Evaluation