



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA ST., N.W.  
 ATLANTA, GEORGIA 30323

FEB 15 1989

Report Nos.: 50-335/88-01 and 50-389/88-01

Licensee: Florida Power and Light Company  
 9250 West Flagler Street  
 Miami, FL 33102

Docket Nos.: 50-335 and 50-389

License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie 1 and 2.

Inspection Conducted: January 9 - 13, 1989

Inspector: F. N. Wright 2/9/89  
Date Signed

Approved by: J. P. Potter 2/13/89  
Date Signed  
 J. P. Potter, Chief  
 Facilities Radiation Protection Section  
 Emergency Preparedness and Radiological  
 Protection Branch  
 Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine, unannounced inspection was conducted in the areas of pre-outage planning, preparations, and management support for implementing the licensee's radiation protection program. The review included: licensee organization and management controls; maintaining occupational exposures as low as reasonably achievable (ALARA); training and qualifications; control of radioactive material and surveys; outage preparations for provisions, licensee action on previously identified inspection findings, and followup on recently issued information notices.

Results: No violations or deviations were identified. The licensee was adequately preparing for the upcoming Unit 2 outage scheduled to begin in February 1989. The inspector closed previously identified violations for failure to perform adequate surveys and failure to label containers of radioactive material after verifying that the licensee had completed corrective actions specified in licensee response to Notice of Violation dated October 13, 1988. The inspector also closed two Inspector Followup Items (IFIs) concerning licensee controls for making changes to radiation work permits and licensee methodology for surveying and releasing clean material from the licensee's Radiological Control Areas (RCA's). The items were closed after verifying that the licensee had completed reviews and improvements of these problems and procedures. The inspector identified an Unresolved Item (URI) concerning licensee failure to complete routine tasks documented in licensee procedures that was identified by the licensee's quality assurance program. The inspector also opened two IFIs. One concerned a review of general employee training



(GET) instructor qualifications for vendor trainers. In the second IFI, the licensee agreed to review the licensee criteria threshold levels for documenting radiological incident reports. The inspector also found that the licensee was enhancing the training and qualifications for health physics contract technicians. The licensee had met personnel contamination reduction goals by having only 315 cases with a goal of 400 in 1988 (down 291 from 1987). The licensee had also met person-rem goals for 1988 having a total person-rem total of 551 person-rem below the goal of 609 person-rem for the year. The 275 person-rem per unit is significantly lower than previous person-rem per unit averages for similar reactors in the USA.



## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*J. Barrow, Fire Protection Supervisor
- \*J. Barrow, Operations Superintendent
- \*G. Boissy, Plant Manager
- \*H. Buchanan, Health Physics Supervisor
  - C. Crider, Outage Maintenance Supervisor
- \*R. Church, Industrial Safety Engineer Group
- \*L. Croteau, Training Supervisor
- \*J. Danek, Cooperate Health Physics
- \*B. Dawson, Maintenance Supervisor
- \*D. DeBoch, Lead Health Physics Instructor
  - P. Fincher, Training Superintendent
  - L. Jacobus, Health Physics ALARA Coordinator
- \*L. Large, Assistant Health Physics Operations
  - R. McCullers, Health Physics Operations Supervisor
  - W. Mead, Reactor Engineer, Reactor Engineering Group
- \*H. Mercer, Health Physics Technical Supervisor
- \*R. Parks, Project Manager
  - D. Powell, Operating Experience Feedback Coordinator, Cooperate Staff
- \*D. Sipos, Services Manager
- \*H. Ware, Technical Training Coordinator
- \*J. West, Assistant Operations Supervisor
- \*C. Wilson, Mechanical Maintenance Supervisor
- \*E. Wunderlich, Reactor Engineering Supervisor

Other licensee employees contacted during this inspection included technicians, mechanics, and office personnel.

#### Nuclear Regulatory Commission

- \*G. Paulk, Senior Resident Inspector

\*Attended exit interview

### 2. Organization and Management Controls

#### a. Organization and Staffing

Through interviews with the licensee's staff and review of licensee procedures, the inspector reviewed the licensee's radiological protection organization, staffing levels, qualifications, and its methods and degree of interaction with other plant sections in planning for the upcoming Unit 2 refueling outage. The inspector determined that the licensee's radiation protection organization was

adequately structured to support refueling and modification work with the support of vendor personnel. The licensee has 24 ANSI qualified permanent health physics (HP) technicians. HP technicians are referred to as Radiation Protection Men (RPM) by the licensee. During the outage, the licensee plans to upgrade five of the RPM's to supervisors to oversee vendor HP technicians. Based upon the scope of the outage, the licensee plans to contract 72 ANSI qualified and 34 junior HP technicians. The remainder of the facilities senior RPM's are to be placed in key positions to support the outage work. One member of the HP staff will be one of three containment coordinators along with other members of the facility staff to provide a focal point for coordinating all work performed by the various disciplines in the unit two containment building. Having a RPM with ALARA and radiation protection expertise among the three containment coordinators demonstrates management's support for the radiation protection program.

b. Audits in Radiological Protection

Since March 1988, the licensee has conducted monthly performance audits in which personnel monitoring and controls into high radiation areas were reviewed.

The inspector reviewed the following audits.

QSL-OPS-88-604, Monthly Performance Audit - May issued June 13, 1988

QSL-OPS-88-616, Performance Monitoring - July issued August 22, 1988

QSL-OPS-88-629, Facility Staff Training and Qualification, issued December 16, 1988

QLS-OPS-88-637, Performance Monitoring Audit - November, issued December 19, 1988

Monthly Performance Audit - QLS-OPS-88-604, issued June 13, 1988, identified a finding for failure to perform 40 second hand and feet frisks. The audit reported personnel frisking habits were observed at RCA exits. Thirty-one people were observed and 90% of those observed frisked properly. For 10% of the personnel observed, frisking was satisfactory only after prompting from the auditor. The audit stated that since February 1988, more emphasis has been placed on proper frisking procedures by the St. Lucie Training Department.

The report stated that nothing less than 100% compliance, without prompting, is acceptable in the area of personnel frisking. The report recommended continuing management emphasis on frisking habits, utilizing a monitor to observe personnel frisking, and use of a frisking device that causes personnel to perform a proper frisk, QSL-OPS-88-616 issued in August of 1988, reported observation of personnel performing 40 second hand and foot frisking and whole body

frisking for 67 personnel during the month of July 1988. For the total population, 100% compliance with frisking requirements was observed. The report stated that prompting was necessary by the monitors assigned to observe frisking habits, however, no incidents occurred where personnel were permitted to frisk improperly.

Performance Monitoring Audit - November, QSL-OPS-88-637, dated December 19, 1988, identified a problem with processing HP documentation. As described in the audit report, quality assurance records substantiating completion of HP activities were not being completed, reviewed, and submitted for storage in a timely manner. The inspector stated that the audit finding is a violation for failure to follow procedure, in that, Health Physics Operating Procedure HP-4, Revision 22, Paragraphs 8.1 and 8.2 require that upon completion of the daily, weekly, monthly, quarterly, semiannual, or annual requirements, the initiating person shall have ensured that the required activities have been completed and documented. The check-off sheets substantiating completion of the scheduled activities are among the required records listed in Section 7.0 of the procedure. The inspector reported that the audit determined that the check-off sheets are not being completed, reviewed, and submitted for storage in a timely manner. The inspector reported that many of the activities documented on the check-off sheets are tasks required to demonstrate compliance with 10 CFR 20 and licensee Technical Specifications. The auditor observed several check-off sheets from previous dates, both daily and weekly which were incomplete and had not been reviewed. The auditor also reported that the records were being held without proper storage for longer than necessary.

The HP staff had not responded to the audit finding at the time of the report. The inspector stated that failure to complete scheduled routines to demonstrate compliance with 10 CFR 20 requirements was a potential violation that had been identified by the licensee. The inspector informed the licensee staff at the exit meeting that the finding would be an IFI. However, upon management review, it was decided to make the finding a URI\* pending a review of the adequacy of the licensee's corrective action. During a telephone conversation on January 24, 1988, between F. N. Wright of the NRC and H. Buchanan of Florida Power and Light (FPL), the licensee was informed that the audit finding in QSL-OPS-88-637 would be considered a URI rather than a IFI as originally discussed in the exit meeting held January 13, 1989, at the St. Lucie facility. (URI 50-335/89-01-01).

c. Radiological Incident Reports

The licensee's Health Physics Manual, Revision 6, Radiological Incident Reports (RIRs) states that any incidents involving

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\*Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations.

radioactive materials which produce, or in the opinion of the HP Supervisor, threaten to produce a radiation dose equivalent to personnel that may be in excess of 10 CFR 20 limits, shall be reported as soon as possible to the Corporate Health Physicist (or designee). The inspector reviewed licensee procedure HP-101, Identification and Reporting of Radiological Events, Revision 4. Through interviews with licensee representatives, the inspector determined that the licensee had not initiated a Radiological Incident Report (RIR) in 1988. The inspector discussed the threshold requirements for initiating a RIR with licensee representatives. The licensee's RIR procedures for the radiological protection program do not require the licensee to document or trend violations of radiation protection procedures. Licensee representatives agreed to review the criteria for initiating RIR's to ascertain the root cause and provide adequate correction action for radiological protection program violations. The inspector stated that a review of the licensee's procedures for initiation of RIR's would be reviewed during a future inspection as IFI 50-335/89-01-02.

d. Plant Goals

The inspector determined through interviews with plant management that the licensee was participating in a quality improvement program that had started several years ago. The goal of the program was to improve plant performance in nine areas including reducing unplanned shutdowns, lost time accidents, personnel contaminations, unplanned days offline, and NRC violations. Other categories included improving equipment availability factor, dollars spent per mega watt hours, reducing person-rem exposures, and operating within a budget variance. The program is monitored by a group of Japanese who monitor nuclear power plant performance in the nine areas and issue a quality performance award known as the Deming Award. In the areas of radiation protection, the licensee had set a 1988 person-rem goal of 609 person-rem per site. The 1988 person-rem total was 551 person-rem per site or 275 person-rem per unit. The licensee had also reduced personnel contamination events (skin and clothing) from 606 in 1987, to 315 in 1988.

e. Short Notice Outage Management

The inspector determined through interviews with licensee employees, review of licensee procedures, and review of planning schedules, that the licensee has a program to improve outage efficiency for unscheduled outages. The licensee's program is described in Administrative Procedure No. 0010533, Short Notice Outage Management (SNOM), Revision 0. The program defines responsibilities to prepare, maintain, and implement an outage schedule on short notice.

The inspector reviewed a SNOM plan for Unit 1 that prioritized identified work, showed the status of work packages and parts

information, and showed crew assignments. The inspector also determined that the licensee has a SNOM call list in order of preference for each section. The SNOM plan appeared to be a good management concept to efficiently handle unplanned or short notice outages for performing maintenance and reducing outage down time.

### 3. Outage Planning and ALARA Activities

10 CFR 20.1.c states that persons engaged in activities under licenses issued by the NRC should make every reasonable effort to maintain radiation exposure ALARA. The recommended elements of an ALARA program are contained in Regulatory Guide 8.8, Information Relevant to Ensuring that Occupational Radiation Exposure at Nuclear Power Stations will be ALARA, and Regulatory Guide 8.10, Operating Philosophy for Maintaining Occupational Radiation Exposures ALARA.

The inspector discussed the ALARA goals, objectives and plans to maintain exposures ALARA for the upcoming Unit 2 outage.

#### a. Management Support and Planning

Through interviews with licensee representatives, the inspector determined that the licensee management had supported ALARA activities and had raised the ALARA cost justification figure from 2,000 to 10,000 dollars per person-rem reduction.

On January 13, 1989, the Unit 2 reactor was in its longest continuous run of 408 days with the run time still continuing. The Unit 2 outage was scheduled to begin on February 1, 1989, and last 83 days. Through interviews with licensee representatives, attendance of outage preparation meetings, and review of ALARA Board Meeting minutes, the inspector determined that the Unit 2 outage was going to last approximately twice as long as previous refueling outages due to the planned work and modifications. Two jobs requiring significant planning and resources were replacement of the 2-B1 reactor coolant pump impeller, and nozzle replacement for resistance temperature detectors (RTDs).

Through interviews with licensee representatives, the inspector determined that outage planning meetings usually began 9-10 months prior to the start of the outage. Unique or high person-rem exposure tasks usually are assigned to a task team made up of representatives from various disciplines to plan the work. During the inspection, the inspector attended an outage planning meeting for work on the 2-B1 reactor coolant pump. Representatives from Outage Management, Operations, Quality Control, Electrical Maintenance, Backfit, Mechanical Maintenance, Health Physics, Inservice Inspection, and the Technical Support Staff were in attendance.

The participants discussed technical specification requirements, procedure logic, radiological surveys, housekeeping, decontamination,

and safety. During the meeting, licensee representatives discussed methods to reduce exposure levels from the pump impeller. The licensee plans to move the impeller into the fuel pool and hydrolyse the impeller under water, put the impeller in a container filled with water, and move it to the New Fuel Building. In addition to weekly outage and meetings planned for Unit 2 outage, the licensee had seven scheduled meetings for specific topics in January 1989.

The inspector reviewed inter-office correspondence dated January 5, 1988, addressing St. Lucie Unit 2 Reactor Coolant System Instrument Nozzle Replacement. A Task Assignment Record (TAR) for the job was attached. The TAR listed specific tasks, priorities, assignments, and status on the job preparation. Thirty-two team members were working in support of the activity.

b. Training Mockups

The inspector observed the licensee's mockup equipment for steam generator work. Protective clothing was stocked in the area for steam generator jumper dress rehearsals and the mockup area included supplied air system for use of supplied air hoods. The training area was also equipped with some of the equipment which would be utilized in steam generator work.

c. Portable Shielding

Licensee Procedure HP-55, Portable Shielding, Revision 6, describes the licensee's portable shielding program. The procedure does not allow the use of portable shielding as a permanent fixture and requires an evaluation to determine if additional shielding should be permanently installed. The procedure also calls for HP notification prior to removing any temporary shielding and verification that the person-rem savings from installed portable shielding exceeds the installation person-rem expense.

The procedure requires that all portable shielding be tracked and logged. The procedure includes charts for installing lead on safety and non-safety piping. Maximum lead shielding loading limits are given based on the size of pipe to be shielded based on licensee engineering considerations for dead weight analysis.

d. Containment Cooling in Unit 1 Refueling 1988

The licensee had brought in air conditioners for the Unit 1 outage during the Summer of 1988. The licensee assembled a containment cooling team to implement and monitor the project. The team looked at three performance indicators: personnel contaminations, heat stress, and containment stay time. The team observed improvements in all three areas. The licensee's assessment showed that the air conditioning had reduced personnel contamination in containment from sweating around the face and from protective clothing

(PC) leaching contamination to the skin. The licensee also determined that the cooler containment temperature allowed workers to be more efficient by reducing heat stress and extending the work time between breaks. The task was logically approached reviewing several cooling options for applicability and cost. The cost of the project was estimated at \$162,000. The licensee compared the number of contaminations in the 1988 refueling outage to the 1987 refueling outage where cooling was not utilized on Unit 1.

The licensee's findings showed the following improvements:

	<u>Contamination Events</u>	
	<u>1987</u>	<u>1988</u>
PC Leaching	52	25
Poor Personal HP Practices	61	24
Inadequate PC	33	12
Torn PC	20	4
Spills	13	5
Others	8	15

The inspector determined however that the licensee did not plan to use cooling on the Unit 2 outage in 1989 for two reasons. The ambient temperature from a summer to a winter outage would be lower in 1989 on Unit two. Also, Unit 2 lacked an additional containment access for utilizing cooling equipment outside of containment which was utilized on Unit 1. The inspector determined that the licensee found that the cost of the cooling was beneficial for the observed results and was evaluating additional cooling processes for future outages.

The inspector reviewed the following licensee procedures:

HP-55, Portable Shielding, Revision 6

AP-3300120, St. Lucie Plant ALARA Program, Revision 15

#### 4. Training and Qualifications

##### a. Vendor Health Physics Training and Qualifications

Technical Specification 6.3.1 requires that each member of the facility staff meet or exceed the minimum qualification in



ANSI/ANS-3.1-1978 for comparable positions, except for the HP Supervisor who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

The inspector reviewed the licensee's plans for evaluating vendor HP qualifications in order to comply with the licensee's Technical Specification requirements. At the time of the inspection, the licensee HP and training departments were in the process of upgrading the methods for determining HP technician qualifications. The HP department evaluates HP qualifications using resumes and makes selections based on specific criteria utilized in determining a HP technicians experience for meeting the ANSI qualification requirements. Selected candidates are brought onsite and given a four hour examination to evaluate their general knowledge of basic radiation physics and their abilities to determine adequate radiation protection measures for various scenarios. This exam is utilized to evaluate students capabilities as an ANSI 3.1 technician. The vendor HP technician training program will be a utility training program and when the program is implemented at either site it will be acceptable to both facilities. The general exam will be given only once and will be good for lifetime as long as the employee remains in the HP profession. The candidate must make a score of 80% to pass the general exam. Candidates are also given 16 hours of training on site-specific procedures, duties, and responsibilities. The site-specific training will be required annually and the student must score 80% on the written exam. Persons trained on some designated pieces of equipment or a system such as the portable breathing air systems must demonstrate 100% on job performance measures. The new procedures will also require any contract employee remaining onsite for a period greater than six months to participate in the licensee's continuing HP training program. The continuing HP training program addresses changes in procedures or policies and awareness of current industry events. The licensee plans to implement the new training prior to the Unit 2 outage.

b. Radiation Worker Training

The licensee is required by 10 CFR 19.12 to provide basic radiation protection training to workers. Regulatory Guides 8.13, 8.27, and 8.29 outline topics that should be included in such training.

The inspector reviewed the General Employee Training (GET) radiation protection training course outline and lesson plans. The inspector verified that the lesson plans addressed radiation protection activities including the origin, biological significance, administrative concerns, frisking techniques, and the use of hot particle zones.

Through interviews with licensee representatives, the inspector determined that the licensee had one full-time licensee employee assigned to present GET which includes radiation protection, quality assurance, safety, and fire protection. The inspector determined

that the licensee utilizes contractor personnel during outage and non-outage periods to provide GET training. The inspector verified that the permanent licensee instructor and the contractor who had completed the licensee Curriculum Development Program were qualified to present the GET training. However, the inspector determined that during outages the number of GET classes increase and the licensee had relied on additional contract support to provide the training. Through interviews with licensee representatives, the inspector determined that when additional contract support was required, the contractor usually arrived onsite four to six weeks prior to the outage to receive on the job training for presenting GET. The contract instructors provided GET training to numerous students who were also contract support personnel hired to work during the outage peak work loads. During outage preparation, the licensee gives level two radiation worker training (three day course) Monday through Wednesday on days and evenings shifts and on Thursday through Saturday on evenings. Additionally, single day retraining classes are given on Thursday and Friday during the day shift. The inspector discussed the peak work load training activity with licensee management. Licensee representatives stated that it was more economical to bring in contractors for peak training periods than to hire additional permanent GET training personnel. The inspector determined that the contractor GET instructor training was informal and not procedurally addressed. The inspector stated to plant management that the lack of a formal training program for GET contractor instructors was a program weakness and that the effectiveness of the existing program during outage conditions would be reviewed in future inspections as IFI 50-335/89-01-03.

The inspector determined through interviews with licensee representatives, that the licensee has several programs to provide input into the GET programs. The training department reviews changes in licensee procedures to consider the need to modify training programs through Training System Action Request (TSAR). The TSAR functions as a work request to modify training programs when procedures are changed. The licensee also surveys training participants upon the completion of each training class for opinions on material presented in the course and suggestions for program improvements. The training department sends an course evaluation form to the student and students supervisor 90 days after course completion to review training effectiveness in worker performance. The licensee also holds formal periodic meetings with discipline representatives to discuss current problem topics.

The inspector reviewed the following licensee procedures:

AP-0005732, Outage Management Training Program, Revision 5

AP-0005735, Instructor Training Program, Revision 6



## 5. Surveys, Monitoring, and Control of Radioactive Material

### a. Surveys and Radiation Work Permits

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as (1) may be necessary for the licensee to comply with the regulations and (2) are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present.

10 CFR 20.203 requires the posting, labeling, and control requirements for radiation areas, high radiation areas, airborne radioactivity areas, and radioactive material.

The inspector reviewed selected radiation and contamination surveys and verified that areas were properly posted. The inspector reviewed selected radiation work permits and determined that the requirements were appropriate for the work involved.

In a previous inspection, the inspector discovered a contaminated cask on the roof of the Unit 2 cask washdown area that was not labeled. The inspector issued two violations for failure to make adequate surveys to determine the extent of the radiation hazards present in accordance with the requirements of 10 CFR 20.201(b). The inspector also determined that the cask was not labeled in accordance with the requirements of 10 CFR 20.203(f)(1). The licensee missed surveying the area for several weeks because the door was locked and the surveyor did not have the key to the area. The licensee agreed to counsel the staff on making routine surveys and proper labeling and change the lock on the door in order that the HP key would provide access to the area. The inspector verified that the area was accessible to HP personnel and reviewed licensee documentation that the HP staff was counseled on the importance of completing routine surveys and labeling radioactive material containers.

During a previous inspection, the inspector determined that the licensee's procedure for Radiation Work Permit (RWP) HP-1, Revision 22, was ambiguous concerning changes made to existing RWPs, in that the procedure did not clearly specify who had the authority to change RWP requirements. The procedure also did not specify when the changes to the RWP documents were to be made. The inspector reviewed Revision 24 to HP-1 dated September 9, 1988, and verified that the procedure specified the staff positions who were authorized to make RWP changes. The changes were to be made on the white copy of the RWP by the person responsible for changing the RWP at the earliest opportunity. The procedure also requires the person making a change to a RWP, to inform the foreman and supervisors working on the RWP of the change, to inform Health Physics (HP) personnel covering work on the RWP, and to notify the succeeding HP Shift Supervisor through the normal turnover process or by documenting the changes in the HP shift log.

b. Surveys for Release of Equipment to Unrestricted Areas

In a previous inspection, the inspector reviewed the licensee's methodology for releasing clean trash to the sanitary land fill. The method included a survey of bagged trash using a Geiger Mueller detector. Licensee representatives agreed to assess their trash monitoring program for possible improvement and the item was identified as IFI 50-335/88-19-05. The inspector reviewed licensee procedure HP-41, Movement of Material and Equipment, Revision 7, and determined that the licensee had set limits for releasing materials to uncontrolled areas using a micro-R meter to detect gamma radiation, and that bags of clean trash should indicate dose rates less than or equal to background radiation plus 50% in a 30 uR/hr or less field. The licensee has also purchased a conveyORIZED waste monitor to be used in releasing clean waste, however, the licensee was not utilizing the system. Licensee representatives reported that the unit was not being used because the HP staff could not support the system monitoring in non-outage periods with the current staffing level. Operation of the system is described in licensee procedure HP-52, Operation of the ConveyORIZED Waste Monitor, Revision 1.

c. Personnel Monitoring

10 CFR 20.202 requires each licensee to supply appropriate personnel monitoring equipment to specific individuals and require the use of such equipment.

During a previous NRC inspection, the inspector determined that the licensee was monitoring personnel extremities to the hands and fingers with a thermoluminescent dosimeter (TLD) and direct reading dosimeter (DRD) attached to the workers wrist. The inspector pointed out that wrist measurements may under estimate finger exposures. During the inspection, the inspector determined that licensee's procedure HP-30, Personnel Monitoring, Revision 15 was being changed to include the use of finger rings. At the time of the inspection the licensee did not have extremity (finger) TLD's onsite. However, the licensee expected them to be available prior to the Unit 2 outage. The licensee's TLD's are analyzed by the corporate staff offsite. The inspector determined that the licensee would continue to use wrist DRD and the correction factor of 3.5 to estimate finger dose. Licensee representatives stated that the correction factor of 3.5 would be monitored and possibly changed once actual finger to wrist dose ratio is determined. The inspector stated that the previous inspector followup item would remain open pending a review of the use of finger rings.

The inspector reviewed the following licensee procedures:

HP-1, Radiation Work Permits, Revision 24  
HP-15, Hot Particles, Revision 0

- HP-21, Survey Requirements for the Detection of Hot Particles, Revision 1
- HP-23, Health Physics Activities in the Reactor Containment Building During Shutdown, Revision 1
- HP-30, Personnel Monitoring, Revision 16
- HP-34, Estimating Beta Skin Dose from Gas Cloud Submersion, Revision 7
- HP-41, Movement of Material and Equipment, Revision 7
- HP 52, Operation of the Conveyorized Waste Monitor, Revision 1
- HP-112, Multibadging, Revision 3

#### 6. Outage Preparations and Provisions

Through interviews with licensee representatives, the inspector determined that the licensee had established resources to support the outage. Materials such as protective clothing (PC), plastic bags, step off pads, and radioactive warning signs were on an automatic ordering system having minimum and maximum quantities based on their use in the last 10 to 12 years. The licensee also maintains a warehouse of such materials at a location between St. Lucie and Turkey Point. The licensee also had contracts with vendors to support radwaste activities and laundry services.

In containment, the licensee plans to utilize a vendor to wash down the refueling cavity with a hydrolaser and apply a strippable coating to cavity surfaces. In previous outages, the licensee has found the hydrolasing and painting to be very effective in reducing contamination and exposure levels in the refueling cavity.

#### 7. Licensee Actions on Previously Identified Inspection Findings (92701, 92702)

(Open) IFI 335/88-19-01: Review the licensee's extremity monitoring program to verify that TLDs are appropriately utilized on fingers to measure personnel extremity exposures.

The licensee has not implemented its extremity monitoring program for finger exposures and this program will be reviewed in a future inspection. (See Paragraph 5.c for details.)

(Closed) IFI 335/88-19-02: Review the licensee's RWP procedures and verify that the licensee has established the necessary administrative controls to authorize and document RWPs.

The inspector reviewed the licensee's procedure HP-1, RWPs, Revision 24, and verified that the procedure specified authority for RWP changes and the responsibilities for the persons making the permit changes. (See Paragraph 5.a for details.)

(Closed) Violation 335/88-19-03: Failure to perform adequate radiological surveys of the Unit 2 cask washdown roof.

The inspector reviewed the licensee's response dated October 13, 1988, and verified that the corrective actions specified therein had been taken. (See Paragraph 5.a for details.)

(Closed) Violation 50-335/88-19-04: Failure to label two containers (transfer cask containing contaminated reactor thermal shield parts) and associated slings with radioactive material labels.

The inspector reviewed the licensee's response dated October 13, 1988, and verified that the corrective actions specified therein had been taken. The inspector observed the use of a new radioactive material label for containers exposed to the elements. (See Paragraph 5.a for details.)

(Closed) IFI 335/88-19-05: Review the licensee's procedures and methods for measurement of material leaving the licensee's RCA.

The inspector reviewed revisions to licensee procedure HP-41, Movement of Material and Equipment and verified that the procedure required the use of a micro-R meter for monitoring bulk items such as bagged clean trash, clean laundry, in low background areas. (See Paragraph 5.b for details.)

#### 8. Followup on IE Information Notices

The inspector determined that the following Information Notices (INs) had been received by the licensee, reviewed for applicability, distributed to appropriate personnel and that action, as appropriate, was taken or scheduled.

IN-88-6 High Radiation Hazards from Irradiated Incore Detector and Cables.

IN-88-79 Misuse of Flashing Lights for High Radiation Area Controls

IN-88-62 Recent Findings Concerning Implementation of Quality Assurance Programs by Suppliers of Transport Packages

#### 9. Exit Interview

##### a. Inspector Comments

The inspection scope and findings were summarized on January 13, 1989, with those persons indicated in Paragraph 1 above. The inspector reported to management that the attitude of persons interviewed was positive and in all cases the plant staff reported a good working relationship with the radiation protection staff. The only criticism expressed by the plant staff was that the HP staff appeared to be short handed at times.

The inspector reported that the training program for contract HP technicians was undergoing significant changes with improved emphasis on worker performance in applied nuclear power plant activities. The



inspector stated that the broad changes in the training plan, so near a scheduled outage, would require strong management support for implementation in the Unit 2 outage in February 1989.

During the inspection, the inspector observed exposure reduction considerations in preparation for the outage in outage meetings and use of mockup equipment.

The inspector noted that through management attention to personnel contamination, the licensee was well below its 1988 goal of 400 such events, with only 315 cases documented.

Licensee representatives also expressed interest in reviewing its method for establishing annual ALARA goals by involving plant supervisors in all disciplines in the goal setting process, with specific responsibility for supervisors in obtaining reduced person-rem totals.

The licensee plans to do 100% ultrasonic test (UT) of replaced fuel is also commendable and should help reduce future personnel exposures.

b. New Items

1. Unresolved Item 50-335/89-01-01

The inspector stated that a licensee performance monitoring, August-November 1988, QSL-OPS-88-637, dated December 19, 1988, identified a problem with processing health physics documentation. As described in the audit report, quality assurance records substantiating completion of health physics activities were not being completed, reviewed, and submitted for storage in a timely manner, upon completion of the required activities. The inspector stated that the audit finding appeared to be a violation for failure to follow procedure, in that, Health Physics Operating Procedure HP-4, Revision 22, Paragraphs 8.1 and 8.2 require that upon completion of the daily, weekly, monthly, quarterly, semiannual or annual requirements, the initiating person shall have ensured that the required activities have been completed and documented. The check-off sheets substantiating completion of the scheduled activities are among the required records listed in Section 7.0 of the procedure. The inspector reported that the audit determined that the check-off sheets are not being completed, reviewed, and submitted for storage in a timely manner. The inspector reported that many of the activities documented on the check-off sheets are required to demonstrate compliance with 10 CFR 20 and licensee Technical Specifications. The auditor observed several check-off sheets from previous dates, both daily and weekly which were incomplete and had not been reviewed. The auditor also reported that the records were being held without proper storage longer than necessary.



The inspector discussed the enforcement policy as stated in 10 CFR 2, Appendix C, Paragraph G. Paragraph G states in part, that because the NRC wants to encourage and support licensees initiative for self-identification and correction of problems, NRC will not generally issue a Notice of Violation for a violation that meets all of the following criteria:

- a. It was identified by the license;
- b. It fits in severity level IV or V;
- c. It was reported if required;
- d. It was or will be corrected including measures to prevent recurrence, within a reasonable time; and
- e. It was not a violation that could have been prevented by the licensee's corrective action for a previous violation.

The inspector stated at the exit meeting that the licensee's corrective action for the finding would be reviewed in a future inspection as an IFI to verify that the licensee has adequately responded to the finding and that corrective action met the requirements for licensee identified violations. Upon review of the finding by Region II management it was decided that the item should be an unresolved item rather than an IFI. The inspector discussed this decision to make the IFI an URI with the licensee's Radiation Protection Supervisor, H. Buchanan in a telephone conversation made January 24, 1989. Mr. Buchanan stated that he would report the finding enforcement status change to his appropriate management (URI 50-335/89-01-01).

2. Inspector Followup Item 50-335/89-01-02

The inspector determined that the licensee does not have a system to document radiation protection discrepancies or violations of licensee procedures or radiation work permits. Identifying, documenting, and tracking radiological protection violations is identified as a program weakness. Licensee representatives agreed to develop procedures and criteria for initiating investigations of radiological protection violations and trend radiation protection program violations for identifying program weakness. (See Paragraph 2.c for details.)

3. Inspector Followup Item 50-335/89-01-03

The inspector determined and reported to licensee management that during outages, the licensee contracts personnel to present GET training, however, the licensee does not have a documented training program for the instructors to ensure that the instructors are qualified to present GET training topics. A review of the qualifications of contract trainers will be reviewed in future inspections. The inspector noted that in



discussions with licensee representatives the licensee did not commit to any program changes. (See Paragraph 4.b for details.)

c. Previously Identified Inspection Findings

The inspector discussed the status of previously identified items discussed in Paragraph 7 with licensee management and reported the following:

IFI 50-335/88-19-01 was closed after verifying the licensee's procedures for revising radiation work permits was adequately documented.

Violation 50-335/88-19-03 was closed after the inspector verified access to the roof of the Unit 2 cask washdown area was accessible to HP technicians with a HP lock and that the required surveys were being made.

Violation 50-335/88-19-04 was closed after the inspector verified that the cask was labeled and the licensee was utilizing a new radioactive material label for containers exposed to the elements.

IFI 50-335/88-19-05 was closed after the inspector verified that the licensee's procedures had been changed to improve the monitoring methods for bulk items such as clean trash and laundry.

The inspector stated that the IFI 50-335/88-19-01 issued to review the licensee's personnel extremity monitoring program would remain open until the licensee program for extremity monitoring was utilized and the inspector could review its adequacy.

The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection. The inspector expressed his appreciation for the staffs cooperation during the conduct of the inspection.