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Report Nos. 50-321/90-02 and 50-366/90-02

Licensee: Georgia Power Company
 P.O. Box 1295
 Birmingham, AL 35201

Docket Nos.: 50-321 and 50-366

License Nos.: DRP-57 and NPF-5

Facility Name: Hatch Unit 1 and Unit 2

Inspection Conducted: January 24 - 25, and February 22, 1990

Inspector: G. B. Kugo 5 March 1990
 Date Signed

Approved by: J. P. Potter 3/5/90
 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 special reactive inspection involved review of licensee radiation protection activities associated with the January 23, 1990, refueling floor (RF) personnel contamination event.

Results:

Radiation protection staffing appeared adequate to monitor routine RF area activities and to provide special health physics coverage subsequent to the January 23, 1990, contamination event. Licensee actions to evaluate the event were conducted in a timely manner and appeared technically adequate. Site management and corporate health physics staff were involved extensively in the event review. External and internal exposure evaluation results for contaminated personnel were within regulatory limits. Inadequate pre-job evaluations and job history reviews by technicians, and the failure to collect representative samples of workers' breathing air to evaluate potential radioactive material airborne hazards were identified as program weaknesses.

The following violation was identified during the inspection.

- Failure (1) to conduct adequate pre-job surveys (evaluations) for resuspension of surface contamination and (2) to collect representative worker breathing zone air samples to evaluate the radiation hazards within

or adjacent to the Unit 1, RF, Dryer Separator Pool (DSP) area
(Paragraphs 4.a and 4.b). Violation of 10 CFR 20.201(b) requirements.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. Botsill, Acting Manager, Operations
- *D. Davis, Manager, General Support
- *O. Fraszter, (QA) Site Manager, SAER
- #*J. Hammonds, Supervisor, Nuclear Safety and Compliance (NSAC)
- #*M. Link, Supervisor, Health Physics (HP)
 - B. Moxley, Dosimetry Foreman, HP
 - P. Moxley, Specialist, HP
- *H. Nix, General Manager
- #*M. Rigsby, Senior Health Physicist
- #*D. Smith, Superintendent, HP
- *L. Sumner, Assistant General Manager, Plant Operations
- *S. Tipps, Manager, NSAC
- *R. Zavadoski, Manager, HP and Chemistry

Other licensee employees contacted included engineers, technicians, operators, and office personnel.

Other Organization

- *D. Hopper, Project Supervisor, Health Physics/Chemistry Southern Nuclear Operations Company (SONOPCO)

Nuclear Regulatory Commission

- *J. Menning, Senior Resident Inspector

*Attended exit interview

#Participated in February 22, 1990 teleconference

2. Notification and Preliminary Event Chronology (93701)

On January 23, 1990, Hatch Nuclear Plant (HNP) personnel notified the NRC of elevated airborne radioactive material concentrations and subsequent personal contaminations associated with Unit 1, RF, DSP activities. For grab air samples collected adjacent to the Unit 1 RF area, particulate airborne radioactive material concentrations of approximately 5.2 times the Cobalt-60 (Co-60) maximum permissible concentration in air (MPCa) value listed in 10 CFR 20, Appendix B, Table 1, Column 1, were reported. In addition, personal contamination events, were reported for approximately 17 individuals.

An NRC Region II inspector was dispatched to the facility to review the licensee's preliminary event evaluation activities. Upon arrival on January 24, 1990, the inspector noted that an event review team, consisting of site management, HP supervisors and technical specialists, and compliance personnel, had been established to collect information regarding events prior to, during and subsequent to the January 23, 1990, RF contamination event. In addition, licensee management indicated that corporate HP personnel were in route to the site to assist in conducting and reviewing personnel radiological assessments.

Cognizant licensee representatives outlined the following preliminary RF operation details and event chronology pertinent to the contamination incident.

- ° August - October 1989: In-vessel shield plug and cattle chute placed in Unit 1, RF, DSP area. Cognizant personnel indicated possibility of residual contaminated liquid in DSP when equipment originally placed in area and subsequent evaporation as a result of blocked drain.
- ° January 1990: Plans initiated to move shield plug and cattle chute from Unit 1, RF DSP in preparation for the upcoming Unit 1 outage activities.
- ° January 19, 1990: Radiation surveys of DSP area conducted. Surveys indicated buildup of radioactive contamination in pool. Equipment previously wrapped in plastic not surveyed.
- ° January 23, 1990, 9:00: All times Central Standard Time (CST): ALARA review of task conducted with workers. One HP technician detailed to provide coverage of DSP activities and one technician assigned responsibility for general RF activities.
- ° January 23, 1990, 11:15: Workers sign-in for DSP job and ALARA briefing provided. A total of 17 individuals in RF 228 foot (228') elevation area working on DSP and other tasks.
- ° January 23, 1990, 12:00: Unit 1 RF ventilation secured to minimize resuspension of loose contamination during work activity in the Unit 1 DSP. Available air sampling/monitoring equipment included a continuous low-volume air sampler located above the Unit 1 DSP, a high volume RADECO sampler positioned on the RF at the edge of the Unit 1 DSP and, in addition, one continuous iodine monitor-continuous air monitor (CIM-CAM) operated in the south end of the RF.

Five individuals enter DSP to initiate task. All workers wore appropriate protective clothing and respiratory protective equipment. Cattle chute raised slightly, plastic cover removed and subsequently wrapped for disposal. Chute raised from the DSP, placed on 228' RF elevation and covered with plastic. Work initiated to raise the in-vessel shield plug.

- January 23, 1990, 13:00: Operator entered and toured the RF clean areas for 5 to 10 minutes. Two boilermakers exited refueling floor and noted contamination during routine frisk conducted in RF 228' change-out area. Contamination verified by the RF HP technician performing manual frisk of individuals. Concurrently, operator exited the RF area and determined to be contaminated. Initial indication of airborne problem based on use of protective clothing, worker activities, and unexpected personal contamination.
- January 23, 1990, 13:00-13:35: RF HP technician checked CIM-CAM monitor and reported no indication of airborne problem for Unit 2 RF area. Monitor reading indicated airborne particulate concentration of approximately $1.0 \text{ E-}09$ microcuries per cubic centimeter ($\mu\text{Ci/cc}$).

RF HP technician initiated special surveys to locate the source and evaluate the extent of contamination. A fifteen minute, high volume air sample collected from the Unit 1 RF area adjacent to DSP and subsequently sent for quantitative radiochemical analysis. General area survey using Massilin cloth for the RF floor indicated contamination of clean areas. Further access to the refueling floor restricted. Excluding a crane operator, personnel without respiratory protective equipment required to exit RF. Work to raise reactor shield plug from DSP to the RF 228' elevation completed.

All personnel, excluding the DSP HP technician, exited the RF. Additional personal contaminations noted. Three additional HP personnel dispatched to the 228' RF dress-out area to provide monitoring and decontamination assistance.

CIM-CAM alarmed. Airborne particulate concentrations of $2.0 \text{ E-}9 \text{ uCi/cc}$ reported. DSP HP technician exited the RF.

All personnel, a total of 20 individuals gathered in RF change-out area as a result of RF 228' or 203' Reactor Building elevation activities, were escorted to the Decon Room. Nasal smears collected and decontamination activities conducted, as applicable. As a precaution, all 20 individuals monitored by whole body counting analyses for potential internal exposure to airborne radioactive materials. Personal contamination reports issued for 17 individuals.

- January 23, 1990, 14:20: The On Shift Operations Supervisor (OSOS) notified by HP personnel that airborne material concentrations in the RF area were approximately 5.2 times the Co-60 MPCa value listed in 10 CFR 20, Appendix B, Table 1, Column 1.
- January 23, 1990, 14:25: OSOS announced a radiation event based on the MPCa concentration in RF area as required by procedure.
- January 23, 1990, 14:26: Standby Gas Treatment system initiated.

- ° January 23, 1990, 16:00: NRC notified in anticipation of media interest.

3. Training and Qualifications (93701)

10 CFR 19.12 requires the licensee to instruct all individuals working or frequenting any portions of the restricted areas in the health protection aspects associated with exposure to radioactive material or radiation, in precautions or procedures to minimize exposure, and in the purpose and function of protection devices employed, applicable provisions of Commission Regulations, individual's responsibilities, and the availability of radiation exposure data.

10 CFR 20.103(c)(2) requires that the licensee maintain and implement a respiratory protection program that includes determination by a physician prior to use of respirators, that the individual user is physically able to use respiratory equipment.

From review of applicable records and discussion with cognizant licensee personnel, the inspector verified satisfactory completion of general radiation and respiratory protection equipment training for personnel involved in the January 23, 1990, event. In addition, the inspector determined that respiratory fit tests had been conducted as required and that certification of medical qualifications to use respiratory equipment was current for the workers involved.

The training for the technicians preparing the radiation work permit (RWP), conducting ALARA reviews, and providing job coverage on the refueling floor was discussed with cognizant licensee representatives. Training for the technicians involved was completed as required.

In addition, the inspector discussed the quality of HP technician training based on the adequacy of pre-job ALARA reviews and changes to RWP respiratory protective equipment controls made by HP technicians. For example, licensee records indicated that an HP technician conducted a job history review of the DSP task by evaluating only the January 19, 1990 radiological survey conducted immediately prior to initiating the work. The inspector noted that, although a job history file did not exist for the task, applicable radiological surveys for removal of equipment from the DSP area were conducted previously, for example 1988, and were available for review. Licensee representatives stated that there was no actual job history file for review and that procedures did not require comparison with previous surveys. In a second example, an HP technician's decision to change the RWP respiratory protective equipment requirements was reviewed. The inspector noted that the RWP requirements were changed from air-supplied hood to full-face particulate respirator during evolution of the job and that the change was initiated without conducting any surveys/evaluations of potential airborne radioactive material hazards. The inspector was informed by licensee representatives that the technician providing job coverage had previous experience with DSP area activities. Furthermore, the technician knew that, in addition to

providing a respiratory protection function, the air-supplied hood was chosen initially to provide supplemental cooling ventilation and that either the air-supplied hood or full-face particulate respirator provided adequate protection factors for work associated with removal of equipment from the DSP. Licensee representatives noted that no personnel wearing particulate respirators during RF activities on January 23, 1990, reported positive whole body analyses.

Licensee representatives believed these issues reflected problems with procedure interpretation and were not indicative of programmatic problems with HP training. The inspector noted that, subsequent to identification of the airborne contamination event, technician activities appeared to be conducted in a timely manner and were technically adequate to evaluate the event and to minimize additional personnel exposure. No additional concerns regarding HP technician training were identified.

No violations or deviations were identified.

4. Radiation Controls (93701)

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as may be necessary for the licensee to comply with the regulations in 10 CFR Part 20 and are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present.

10 CFR 20.201(a) defines a survey to mean an evaluation of the radiation protection hazards incident to the production, use, release, disposal or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive materials present.

Technical Specification (TS) 6.11 requires procedures for personnel radiation protection to be prepared consistent with the requirements of 10 CFR Part 20 and to be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

The inspector reviewed and discussed with licensee representatives pre-job planning, job history review, and current surveys conducted prior to initiation of moving the equipment from the DSP area.

a. Pre-job Surveys and Review

From discussion with cognizant licensee representatives, the inspector was informed that radioactive contamination levels had increased significantly since previous activities conducted in the DSP area. The inspector reviewed and discussed with licensee representatives procedural guidance for evaluating radiological conditions and results of radiological surveys previously conducted

in association with removal of equipment/materials from the Unit 1 DSP area.

Administrative Control Procedure, 60AD-HPX-009-05, ALARA Program, Revision (Rev.) 3, dated September 18, 1989, required an ALARA review to be conducted for submitted work requests involving smearable contamination levels greater than or equal to 50,000 disintegrations per minute per 100 square centimeters (dpm/100 cm²). Furthermore, the procedure required for RWP request reviews that the HP group determine the extent of review necessary, and initiate an ALARA review package, if necessary. Review issues in the ALARA package for consideration included establishment of "hold points," determination of radiological conditions, use of containment devices, review of historical files, use of mockup training, requirements for special dosimetry, and potential for implementing dose rate reduction techniques.

Administrative Control Procedure, 60AC-HPX-004-05, Radiation and Contamination Control, Rev. 6, dated September 25, 1989, requires a job specific RWP and airborne radioactivity surveys for occupied areas where loose surface contamination levels exceed 50,000 dpm/100 cm², and prior to and/or during removal or radioactive components from fuel pools and connected systems.

For removal of equipment from the Unit 1 DSP, the licensee implemented RWP Number (No.) 190-0095 dated January 19, 1990, and completed an ALARA review package dated January 23, 1990. The ALARA review indicated pre-job decontamination and dose rate reduction techniques, for example hydrolasing, were not possible as a result of a clogged floor drain in the DSP. In addition, the use of alternate containment devices were not considered possible. The only survey results reviewed were for measurements conducted January 19, 1990, and there was no indication that radioactive contamination levels in the DSP were significantly elevated relative to previous surveys conducted for the area. The inspector noted that the RWP indicated appropriate protective clothing and respiratory protection equipment for work activities in the DSP. However, no guidance for preventing the potential spread of loose contamination away from the work area was detailed.

The inspector identified to, and discussed with licensee representatives concerns that the procedures did not require the review and comparison of current and previous DSP radiation survey results. In addition, the procedure did not provide guidance regarding discrete ALARA "hold points" for smearable contamination levels which would require increased radiological controls and/or additional supervisory review.

The inspector noted that thorough comparisons between the current and historical surveys indicated that additional radioactive contamination had accumulated within the DSP area. For example,

selected surveys of the Unit 1 RF, DSP area conducted September 20, 1988, listed reported dose rates ranging from 6 to 40 millirem per hour (mrem/hr), and loose contamination (smear) beta-gamma survey results ranging from 40 to 1,701 mrem/100 cm². For the referenced survey record, only two of ten smear surveys exceeded 65 mrems for two survey locations on the side of the in-vessel shield plug. In comparison, the January 19, 1990 surveys indicated that external exposure rates in the Unit 1 DSP area ranged from 35 to 120 mrem/hr and loose contamination survey results (total beta-gamma) ranged from approximately 90 to 3,450 mrad/100 cm². Licensee representatives believed that as a result of a blocked drain in the Unit 1, RF DSP, the wall and equipment surfaces were not rinsed thoroughly and also contaminated water was not drained completely from the pool when placing the shield and cattle chute in the DSP area. Licensee representatives believed that the residual contaminated water in the pool evaporated resulting in the elevated radiation contamination levels.

The inspector noted that without procedural action limits for smearable contamination based on previous resuspension studies, an evaluation of the potential resuspension and subsequent transfer of airborne radioactive contamination away from the Unit 1, RF DSP area was necessary to estimate the potential airborne material hazard to individuals on the RF. The inspector noted that such an evaluation was necessary for selecting the appropriate contamination controls and respiratory protective equipment. Cognizant licensee representatives stated that for some limited tasks, resuspension studies of smearable contamination had been completed. However, none of the studies were conducted for the contamination levels measured in the DSP nor for the unique ventilation flow established on the RF. The inspector informed licensee representatives that the failure to conduct adequate surveys (evaluations) of resuspension of smearable contamination to evaluate the hazards present was considered an example of an apparent violation of 10 CFR 20.201(b) requirements (50-321, 366/90-02-01).

One violation concerning the failure to conduct adequate surveys (evaluations) was identified.

b. Breathing Air Sampling

10 CFR 20.203(a)(3) requires, for purposes of determining compliance with the requirements of this section, that the licensee use suitable measurements of concentrations of radioactive material in air for detecting and evaluating airborne radioactivity in restricted areas and in addition, as appropriate, use measurements of radioactivity in the body, measurements of radioactivity excreted from the body, or any combination of such measurements as may be necessary for the timely detection and assessment of individual intakes of radioactivity by exposed individuals.

Radiation Protection Procedure, 62RP-RAD-009-05, Air Sampling Concentration Determination, Rev. 2, dated February 20, 1987, requires air samples to be as representative of the worker's breathing zone air, as practicable.

The limited air sampling conducted for the DSP activities was discussed with licensee representatives. On January 18, 1990, in preparation for initiation of the job, an air sample was collected from the RF 228' elevation and indicated airborne particulate concentrations of 1.01 E-11 uCi/cc . The inspector noted that when the sample was collected, no operations were being conducted within the DSP. Furthermore, air samples were not collected from within the DSP prior to, or during job activities on January 23, 1990. During discussions regarding the RF area airborne monitoring equipment, licensee representatives agreed with the inspector that the location of the CIM-CAM monitor and low-volume air sampler were inadequate to provide representative sampling of worker breathing air within, or adjacent to the DSP area. The inspector informed licensee representatives that the failure to conduct adequate surveys of workers' breathing air to evaluate the hazards present was an additional example of an apparent violation of 10 CFR 20.201(b) requirements (50-321, 366/90-02-01).

An additional example of a violation for the failure to conduct adequate surveys was identified.

5. Exposure Evaluations (93701)

During the onsite inspection, licensee actions regarding evaluation of whole body, skin, and internal exposure were reviewed.

a. Personnel Involved

The inspector discussed the licensee's preliminary exposure evaluations for personnel potentially exposed to airborne contamination during the January 23, 1990 event. Licensee representatives determined that a total of 20 persons were working on the RF 228' elevation and/or entered the 228' change-out area between 11:15 and 14:20 CST.

Licensee representatives stated that all 20 individuals were included in the initial exposure evaluation conducted by the HP staff. The initial evaluation included whole body and personnel frisks, nasal smears, and whole body analyses. Positive nasal smear results and measurable skin and/or clothing contaminations were reported for 15 and 17 individuals, respectively. In addition, whole body counting analyses indicated 14 individuals with potential internal contamination. Subsequent to additional decontamination efforts, positive whole body analyses were established for seven individuals.

b. External Whole Body and Skin Exposure Evaluations

10 CFR 20.101 requires that no licensee shall possess, use or transfer licensed material in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter a total occupational dose in excess of 1.25 rems to the whole body, head and trunk, active blood forming organs, lens of the eyes, or gonads; and 7.5 rems to the skin of the whole body.

The inspector reviewed and discussed with licensee representatives skin exposure evaluations conducted for the event. On January 23, 1990, 17 individuals were determined to have skin contamination. The majority of skin contaminations, 16 occurrences, were reported for the head region. Additional instances of skin contamination were reported for the hands, arms, legs, and torso of the workers.

Excluding one discrete particle found on a worker's forehead, all skin contamination measurements indicated activity less than 20,000 dpm per probe area as measured by an HP-210 probe. For the discrete particle, gamma spectroscopy analysis indicated an activity of approximately $1.23 \text{ E-1 } \mu\text{Ci}$ consisting entirely of Co-60. For the remaining skin contamination dose assessments, an isotopic mixture of approximately 56 percent Co-60, 32 percent Zinc-65 (Zn-65), and 11 percent Manganese-54 (Mn-54), was assumed based on quantitative gamma spectroscopy analyses of the high volume particulate filter sample collected at approximately 13:00 on January 23, 1990. The maximum stay-time for personnel in the area, 120 minutes, was used for the exposure assessments. Using the VARSKIN computer code, the highest skin dose was calculated to be 900 mrem to the skin of the worker's forehead. Skin exposure for the other contaminated individuals was determined to be negligible.

Whole body exposure, as measured by self-reading dosimeters (SRDs), was discussed with licensee representatives. A maximum individual exposure of 50 mrem was reported. No other concerns regarding whole body external exposure were identified.

On February 22, 1990, the inspector reviewed and discussed with licensee representatives the assumptions used in the evaluations and verified the final external whole body and skin dose assessments. The inspector noted that the assumptions appeared appropriate and all doses were within regulatory limits.

No violations or deviations were identified.

c. Internal Exposure Assessment

10 CFR 20.103(a)(1) states that no licensee shall possess, use, or transfer licensed material in such a manner as to permit any individual in a restricted area to inhale a quantity of radioactive material in any period of one calendar quarter greater than the

quantity which would result from inhalation for 40 hours per week for 13 weeks at uniform concentrations of radioactive material in air specified in Appendix B, Table 1, Column 1.

Administrative Control procedure, 60AC-HPX-003-0S, Bioassay Program, Rev. 2, dated June 12, 1989, details responsibilities, analysis methodology, and corrective action levels for monitoring accidental internal occupational radiation exposure.

The inspector reviewed and discussed with licensee representatives the current internal exposure monitoring program. In addition, the final bioassay results and internal exposure assessment for individuals involved in the January 23, 1990 contamination event were reviewed.

Licensee representatives stated that 20 persons who occupied either the RF of RF 228' elevation change-out area during or subsequent to the contamination event were analyzed for potential internal contamination utilizing whole body counting analysis. From the initial screening, 14 individuals were determined to have potential internal contamination. Subsequent to additional decontamination efforts, seven of the 14 positive whole body analyses were determined to be the result of external contamination. Licensee representatives stated that no positive results were noted for individuals wearing respiratory protective equipment during the incident. The maximum internal activities measured for an individual were approximately 0.111 uCi and 0.28 uCi of Co-60 and Mn-54, respectively. Based on the International Commission on Radiological Protection, Report 2 (ICRP II) methodology, exposures for the seven individuals having positive whole body analyses ranged from 2.57 to 14.36 MPCa-hrs. The inspector noted that the analyses were conducted in a timely manner, followed established procedures, and appeared technically correct. All calculated exposures were within the established regulatory limits.

No violations or deviations were identified.

6. Initial Decontamination Efforts (93701)

During the onsite inspection, the inspector reviewed and discussed initial RF decontamination efforts. Subsequent to the contamination event, radiological surveys indicated maximum smearable contamination levels of approximately 85,000 dpm/100 cm² for selected RF areas. During the initial decontamination efforts, a maximum airborne concentration 0.423 MPCa was reported. The inspector verified that posting of the areas was appropriate, all personnel conducting decontamination activities wore the required respiratory protective equipment, and air samples were collected as appropriate. At the end of the onsite inspection, decontamination activities were continuing.

No violations or deviations were identified.

7. Event Review Report (93701)

During the exit meeting conducted January 25, 1990, the inspector noted that NRC review of the licensee's Event Report regarding the contamination event would be considered a followup issue. On February 21, 1990, NRC representatives were provided with a copy of the Event Report, dated January 31, 1990. The report included a detailed sequence of events, listing of significant facts evaluated in the review, conclusions, and recommended corrective actions.

During a February 22, 1990, teleconference between the inspector and licensee representatives, selected aspects of the report were reviewed and discussed. Specifically, licensee representatives stated that the report details only addressed causal factors resulting in the contamination event. Other issues identified by the inspector during the NRC audit, for example nonrepresentative breathing air sampling, were not considered causal factors resulting in the contamination event and thus, were not addressed in the report. Licensee representatives stated that the representative air sampling issue would be reviewed and addressed following receipt of the current inspection report. The final sequence of event and facts listed in the report were similar to the preliminary details presented during the onsite inspection. The inspector noted that the conclusions and recommendations appeared appropriate to prevent recurrence of causal factors.

The following conclusions based on detailed factors were outlined in the report:

- ° Insufficient attention was paid to removal, decon. and storage of RF equipment.
- ° Airborne contamination problems were caused by the removal and bagging of plastic covers, removal of equipment and the disturbance of contamination on the DSP floor.
- ° Maintenance and readiness of personnel decontamination facilities were less than adequate.
- ° The ALARA planning process did not require an adequate level of review.
- ° Documentation and resolution of DSP drainage problems were inadequate.
- ° Measures to protect personnel on the RF and the RF change-out areas were not adequate.
- ° Changes in area RF ventilation did not prevent the spread of contamination and most likely contributed to the contamination of the Unit 1 Reactor Building 203' elevation.

In addition, the following corrective actions were recommended to prevent recurrence based on the conclusions presented:

- ° An evaluation of the equipment used and/or stored on the RF should be conducted to determine whether the equipment should be removed, deconned, or better stored. A plan of action should be developed and implemented based on the evaluation.
- ° HP and Chemistry should revise the applicable procedure to include surveillance of decon facilities.
- ° HP and Chemistry should review applicable procedures to include requirements for increasing levels of review/approval/sign-off based on surface contamination levels.
- ° Outages and Planning action should be implemented to make the refueling floor drain system functional.
- ° HP and Chemistry and Engineering Support should evaluate the ventilation flow path and evacuation route used during an airborne condition on the RF. The evaluation should address the maintenance of negative pressure of the RF with respect to the Reactor Building during all operations.

No violations or deviations were identified.

10. Exit Interview (30703)

The inspection scope and results were summarized on January 24, 1990, with those individuals indicated in Paragraph 1. The inspector detailed the radiation protection activities reviewed and described the 10 CFR 20.201(b) violation discussed in Paragraph 4, above. Concerns regarding inadequate pre-job evaluations and representative worker breathing air sampling were discussed in detail. The inspector informed the licensee that the review of the final Event Report would be considered a followup issue. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.

During a February 22, 1990, teleconference between the inspector and cognizant licensee personnel, issues regarding the final event evaluation and final external and internal exposure assessments were reviewed and discussed. No significant changes to the preliminary skin and exposure estimates were noted. Licensee representatives reported that no proprietary information was included in the Event Report. The inspector informed licensee representatives that receipt of the Event Report and the subsequent teleconference discussion satisfied the followup issue detailed during the January 25, 1990 exit interview. No additional issues requiring followup were identified.

Item NumberDescription and Reference

50-321, 366/90-02-01

V10 - Failure (1) to conduct adequate pre-job surveys (evaluations) for resuspension of surface contamination and (2) to collect representative worker breathing air samples to evaluate airborne radioactivity hazards within and adjacent to the RF, DSP. Violation of 10 CFR 20.201(b) requirements. (Paragraphs 4.a and 4.b.).