



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

DCS

AUG 28 1984

License No.: DPR-23  
Docket No.: 50-261  
EA: 84-13

Carolina Power and Light Company  
ATTN: Mr. E. E. Utley  
Executive Vice President  
Power Supply and Engineering  
and Construction  
411 Fayetteville Street  
Raleigh, NC 27602

Gentlemen:

SUBJECT: CIVIL PENALTY: EA 84-13 (REFERENCE REPORT NO. 50-261/84-05)

This refers to your letters of May 23, 1984 and June 15, 1984 in response to the Notice of Violation and Proposed Imposition of Civil Penalty, EA 84-13, sent to you with our letter of March 13, 1984. Our letter concerned a violation brought to the attention of our inspector by your staff while conducting an inspection on February 21-22, 1983 at the H. B. Robinson Steam Electric Plant Unit No. 2 of activities authorized by NRC License No. DPR-23. The violation was discussed during an Enforcement Conference conducted in the Region II Office in Atlanta, Georgia on February 23, 1984, and during a subsequent Enforcement Conference that I chaired at the plant site on August 21, 1984.

The information provided during the enforcement conferences and in your responses to the Notice of Violation and Proposed Imposition of Civil Penalty has been carefully reviewed. As discussed in the March 13, 1984 NRC letter which proposed the civil penalty, the violation was significant and could have resulted in a worker exceeding the dose limits for exposure to ionizing radiation. As discussed in the Appendix, this violation was correctly categorized as a Severity Level III violation and such violations usually result in the imposition of a civil penalty.

However, the NRC Enforcement Policy, 10 CFR Part 2, Appendix C provides that judgment and discretion should be exercised when determining the appropriate enforcement sanction. I recognize that Carolina Power and Light (CPL) (1) reported this event immediately upon its discovery, even though this event was not required to be reported, (2) promptly investigated the circumstances of this event and took decisive corrective action including (a) strong disciplinary action against involved personnel who performed inadequately, and (b) extensive training sessions with operations, health physics, and management personnel concerning the specifics of this event and the necessity to ensure that all procedures are used and followed, and (3) implemented a long range improvement program in the area of radiological protection which will, in part,

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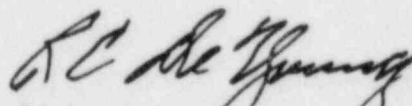
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be based on the principle that radiological protection is every staff member's responsibility. Finally, I was impressed by the attitudes of the involved shift foreman and reactor operator. They acknowledge their mistakes and are committed to improved performance. You should assure that the lessons to be learned from their experiences are not limited to them alone but are learned by all the operating staff. In view of all of these circumstances, I have decided to exercise my discretion and mitigate completely the civil penalty proposed in the NRC Notice of Violation and Proposed Imposition of Civil Penalty dated March 13, 1984.

I wish to emphasize that the full mitigation of the civil penalty does not diminish the NRC's concern for the lack of adequate radiation protection control demonstrated by this Severity Level III violation and the need for continued steady progress in improved performance in this area.

In accordance with Section 2.790 of the NRC's "Rules of Practice," 10 CFR Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room.

Sincerely,



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:

Appendix - Evaluations and  
Conclusions

cc w/encls:

G. P. Beatty, Jr., Manager  
Robinson Nuclear Project Department  
R. E. Morgan, Plant General Manager

## APPENDIX

### EVALUATIONS AND CONCLUSIONS

The violation and associated civil penalty are identified in the Notice of Violation and Proposed Imposition of Civil Penalty dated March 5, 1984. The NRC evaluations and conclusions regarding the licensee's responses dated May 23, 1984 and June 15, 1984 are presented.

#### Restatement of Violation Issued March 13, 1984

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

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 in Part 20, and
2. are reasonable under the circumstances to evaluate the extent of the radiation hazards that may be present.

Technical Specification 6.13 requires that:

1. a radiation work permit be issued for entries into a high radiation area (an area where the dose rate exceeds 0.1 rem per hour),
2. each worker entering into high radiation areas possess a dose rate indicating instrument capable of indicating the dose rate encountered, and
3. entries into locked high radiation areas (areas where the dose rate exceeds 1.0 rem per hour) be controlled by locks with their keys maintained under the administrative control of the shift foreman on duty.

HP Procedure HPP-006, RWP, requires that:

1. work in the radiation control area be performed under a RWP,
2. workers on routine RWPs use radiological posting in order to determine requirements to enter an area, and
3. a routine RWP is valid for repetitive work with relatively small radiological hazards.

Contrary to the above, on February 19, 1984:

1. a HP technician failed to perform adequate surveys for a licensed operator when an entry was made into the reactor keyway sump (where dose rates were in excess of 75 rems per hour) in that he did not:

- a. survey all areas to be entered by the operator to determine the dose rate hazard that was present,
  - b. perform an air survey to determine the airborne concentration of radioactive contaminants in the sump and ascertain the internal contamination hazard present in the sump.
2. the licensed RO entered the reactor keyway sump and did not adhere to radiological safety requirements in that he did not:
- a. obey radiological postings which prohibited his entry into the sump and also required that the radiation control (RC) foreman be contacted if entry was required.
  - b. obtain a special RWP for the sump entry; an entry into an area with a known significant radiological hazard present,
  - c. fully understand the radiological hazards involved when he obtained a key to enter a locked high radiation area.
3. the shift foreman provided a key allowing entry into a locked high radiation area to a worker without assuring adequate administrative control in that he did not assure that the entry into the area was controlled to preclude any potential for excessive radiation exposure.

This is a Severity Level III violation (Supplement IV).  
(Civil Penalty - \$30,000).

Licensee Comments and NRC Evaluations:

- A. Licensee Comment: The root cause of this event was failure of the licensed reactor operator (RO) and contract health physics (HP) technician to adhere to the posted sign "HIGH RADIATION AREA, AIRBORNE RADIOACTIVITY AREA, NO ENTRY, CONTACT RC FOREMAN" resulting in failure to obtain a nonroutine RWP. This occurred primarily because the HP technician did not see the keyway sump entry sign, and the licensed RO assumed the HP coverage he had was equivalent to contacting the RC foreman.

NRC Evaluation: We cannot agree that the single failure to note the posted sign was the root cause of this event. The root cause of the event involved several factors including (1) the authorization, by the shift foreman, of the entry into the reactor cavity area without first assuring that adequate radiological controls would be implemented, (2) the HP technician being improperly trained in that he was unaware of potential hazards in the area, and (3) the containment vessel sump area access controls being similar to other less hazardous high radiation areas (i.e., there were no special controls for key issuance).



The shift foreman gave the RO the key to the area without a specific radiological control briefing or warning. The shift foreman was aware that the thimbles were withdrawn and should have known the hazards that then existed. He should not have issued the key without assurance that adequate controls would be in place, including issuance of an RWP. IE Information Notice (IN) 82-51 stated that entry into radiation fields of the magnitude that exist in the reactor cavity seriously jeopardizes the health and safety of personnel. Any individual likely to enter the reactor cavity area, including all senior reactor operators (SROs) should be cognizant of this information. IN 82-51 specified that SROs should be informed of reactor cavity hazards because they frequently make the decision whether a cavity entry is needed, and supervise facility operations. IN 82-51 further stated that:

"A particular concern of the NRC is that the person charged with the responsibility for implementing these controls, the Shift Supervisor, has frequently been the individual directly involved.... It appears that Shift Supervisors and other licensed senior reactor operators should exert greater control over reactor cavity entries if serious over exposures are to be avoided."

In addition, any individual entering the reactor cavity or similarly hazardous area must be informed of the radiation hazards and controls to be implemented.

The RO told the HP technician he needed HP coverage to check for leaks around the reactor vessel. The HP technician then unlocked the bay doors to provide access to the sump entrance. Before granting access, the HP technician should have ensured that the operator met all of the radiological control requirements for entry into the reactor cavity area and for the task the operator intended to perform. This was not done. Also, the HP technician should have ensured that he was personally prepared before committing to provide coverage. If at any point either the HP technician or RO found conditions requiring controls or protective equipment items that were unavailable at the work site, work should have ceased until needed controls or equipment were in place. These preparations include a clear understanding of the radiological conditions, controls required, and equipment he will need such as a respirator and air sampler. This was not done.

As the licensee points out, the HP technician then failed to act after reading the second posting requiring that the RC foreman be contacted prior to entry to the sump area. In addition, radiological warning signs are required to be conspicuously posted. This sign was not posted as conspicuously as it should have been.

The RO then went into the sump by himself after the technician had surveyed the area above the first platform. The radiation level in the area surveyed was substantially less than that in the area where the RO entered. The HP technician did not enter the area to do an adequate survey because he did not have a respirator. Once he realized that he could not accompany the RO he should have halted the entry. He also failed to survey all areas to be entered by the RO and to perform an air survey. Furthermore, neither the RO nor HP technician recognized that he should have an RWP.

The event was, in part, caused by the failure of the shift foreman, the RO and the HP technician to perform in an adequate manner. The failure of trained personnel to adhere to established procedures and policies, and the failure of a supervisor to detect a degraded situation in this respect, all contributed to the potentially radiological hazardous entry. In addition, the event was caused by the fact that the on-going program for improvement in the area of radiological protection had not yet been completed.

- B. Licensee Comments: The shift foreman's administrative control of a locked high radiation area to preclude any potential for excessive radiation exposure is provided by the Key Control System and radiation postings.

NRC Evaluation: The person controlling access to a high radiation area must be responsible for ensuring that persons he permits to have access are informed of the radiological hazards and have or will satisfy all entry requirements. This was not done. There was no briefing of the RO by the SRO regarding the radiological hazards and there was no RWP issued for the work. This is indicative of poor personnel performance. Plant procedures did not require the shift foreman to approve the RWP. This is an indication that applicable administrative controls were inadequate.

- C. Licensee Comments: The necessity to follow instructions on radiological postings and the conditions for which a nonroutine RWP is necessary are both subjects which are emphasized in the General Employee Training (GET) program. The GET exam includes questions specific to radiological hazards and postings. All three individuals involved successfully completed the GET exam within the past year. In addition, the shift foremen and RO involved in the event received training on radiological postings during their annual SRO/RO training/retraining classes. CPL reviewed IN 82-51 describing similar events at other utilities with the HP personnel and the SROs. Also, the shift foreman and RO are required to review the "Radiation Control Manual" each year. Procedures covering radiological postings and the issuance of nonroutine RWPs are contained in the "Radiation Control Manual." Thus, the three involved individuals had received adequate training to deal with the conditions they encountered and had demonstrated their comprehension of these matters by successfully completing their GET exams.

NRC Evaluations: The three individuals did receive adequate training regarding radiation protection procedures. However, the fact that the RO and the shift foreman had erroneous understandings of the magnitudes of the radiation fields that can be present in the sump area strongly indicates that significant improvements in training can be made. The resultant actions by the three individuals suggest that training without ever alert and responsible attitudes by operating personnel can lead to unacceptable actions as it did in this case.

- D. Licensee Comment: It is not necessarily true that additional administrative controls would have ensured other plant management involvement in the decision to enter the reactor cavity sump. Plant management involvement would have been ensured if the posting at the entrance to the reactor cavity sump had been adhered to.

NRC Evaluation: The reactor cavity sump entry area was not controlled any differently than any other high radiation area, despite the higher hazard associated with it. This resulted in the RO and the HP technician treating the entry into the reactor cavity as a routine high radiation area entry. Their training and experience should have alerted them to the need for caution. The controls exercised should be commensurate with expected hazards.

- E. Licensee Comment: When the company received notice of a similar event at another facility in IN 82-51, CPL took appropriate action in response to the Notice. CPL disagreed with the statement in the letter of March 13, 1984, transmitting this Notice of Violation, that CPL did not take adequate measures in response to IN 82-51. To the contrary, NRC personnel reviewed and concurred in CPL's actions, as discussed in IE Inspection Report No. 83-12 transmitted by letter dated May 26, 1983.

NRC Evaluation: Apparently, you reviewed your administrative controls and concluded they were adequate even though IN 82-51 mentioned special keys for the reactor cavity sump area, issuance of RWPs, and specialized training. The NRC review referenced in IE Inspection Report No. 83-12 consisted of verifying that you were in receipt of the notice and had distributed it to your staff for review.

#### NRC Summary Evaluation and Conclusion

The violation did occur as originally stated and is appropriately classified at Severity Level III. However, the licensee's corrective actions were extensive and comprehensive and included (1) reporting the event immediately upon its discovery, even though this event was not required to be reported, (2) promptly investigating the circumstances of this event and taking decisive action, including appropriate disciplinary actions and conducting extensive training sessions with operations, health physics, and management personnel concerning the specifics of this event and the necessity to ensure that all procedures are used and followed, and (3) renewed management attention and emphasis on the program for improving performance in the area of radiological protection. Because of these actions, I have decided to exercise my discretion and mitigate completely the civil penalty proposed in the Notice of Violation and Proposed Imposition of Civil Penalty dated March 13, 1984.



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