

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION IV

Investigation Report No. 50-285/80-10

Docket No. 50-285

Licensee: Omaha Public Power District
1623 Harney
Omaha, Nebraska 68102

Facility: Fort Calhoun, Unit. No. 1

Investigation at: Fort Calhoun, Omaha, Nebraska

Investigation Conducted: May 14-16, 1980

Investigator: *R. K. Herr* 27 May 1980
R. K. Herr, Investigation Specialist Date

Inspectors: *Dennis L. Kelley* 5/22/80
D. L. Kelley, Reactor Inspector, Date
Reactor Operations and Nuclear Support Branch

G. D. Brown 5/22/80
G. D. Brown, Chief, Fuel Facility and Material Date
Safety Branch

Approved: *G. D. Brown* 5/22/80
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Safety Branch

Summary

Investigation on May 14-16, 1980 (Report No. 50-285/80-10)

Area Investigated: Allegations that the utility knowingly permitted workers to work in an area where radiation exposures were greater than the workers were led to believe. This investigation involved 39 investigator/inspector hours by one NRC investigator and two NRC inspectors.

Results: The allegation was not substantiated, however, during the investigation one item of noncompliance not directly associated with the allegations was identified.

INTRODUCTION

The Fort Calhoun Nuclear Generating Station, Unit 1, located at Blair, Nebraska. Omaha Public Power District is the licensee.

REASON FOR INVESTIGATION

On May 11, 1980, the Nuclear Regulatory Commission, Duty Watch Officer, IE:HQ, Washington, D. C., received a telephone call from an individual who alleged that the Omaha Public Power District lied to the employees of the Foster Wheeler Company, a subcontractor, regarding the radiation level in a work area where subcontractor employees were working.

SUMMARY OF FACTS

On May 12, 1980, the Region IV Director was notified by NRC:HQ that the Duty Officer had received a telephone call from an employee of Foster Wheeler Company, a subcontractor for the Omaha Public Power District, wherein the caller alleged that the utility had lied to the Foster Wheeler employees. The caller expressed the following specific allegation.

Allegation No. 1

That the utility upper management knowingly permitted workers to enter and work in an area where the radiation exposure levels were greater than the workers had been led to expect. This allegation was not substantiated, however, the utility may have unknowingly allowed workers to believe that they received radiation exposure higher than expected.

During the course of this investigation, two allegations surfaced wherein Individual A made the following specific allegation:

Allegation No. 2

That a shaving off a spent fuel rod was discovered in the cavity of the Reactor after shutdown and it is stored in room 29A. This allegation was not substantiated.

Allegation No. 3

That a seismic support identified as ACH-356 was constructed of material alleged to be weaker than the design originally called for. This allegation was not substantiated.

OTHER INVESTIGATIVE FINDINGS

During the investigation, it was discovered that a radiation survey required by Technical Specification 5.8.1 for Room 15A had not been conducted for April 1980, which is contrary to the licensee's procedures.

DETAILS1. Persons ContactedPrincipal Licensee Employees

- *Spencer Stevens, Manager, Fort Calhoun Station
- Fred Franco, Supervisor, Chemistry and Radiation Protection
- Bob Skinner, Health Physicist, Fort Calhoun Station
- *Richard L. Andrews, Section Manager - Operations, OPPD
- *Kenneth J. Morris, Manager, Administrative Services, OPPD

Other Personnel

Individuals "A" thru "J"

*Denotes those attending the exit interview.

2. Investigation of AllegationsAllegation No. 1

That the utility upper management knowingly permitted workers to enter and work in an area where the radiation exposure levels were greater than the workers had been led to expect.

Investigative Findings

On May 14, 1980, Individuals A and B executed signed statements wherein they described the following circumstances:

On March 27, 1980, about 2000 hours, Individuals A and B claim they were assigned to work in Room 15A of the Fort Calhoun Nuclear Generating Station. Individual A stated that he requested Individual C, a Health Physicist (HP) for OPPD, to conduct a radiation survey in Room 15A, however, Individual C refused, claiming that he had conducted a survey within the past 24 hours, posted the results, and did not feel that he should conduct an additional survey.

Individual A, advised that subsequently Individual D, an Engineer for OPPD, conducted a survey and confirmed that his survey was similar to the one conducted on March 26, 1980. Individuals A and B remarked that it took them from 45 minutes to one hour to complete the work in Room 15A. Individuals A and B stated that when they completed their work, their dosimeter read about 180 mr, explaining they received about twice the amount of radiation they had anticipated. Individuals A and B claim they complained to Individuals C and D about their high dosimeter readings and that neither Individual showed much interest. Individual A stated that Individual C did make the comment that the room appeared "too hot" to be working in. Subsequently, on May 11, 1980, Individual A claimed that he learned that more work was scheduled for Room 15A and that Individual E,

a QC inspector, had conducted a survey of the room and determined that the radiation level was higher than expected, adding that this was confirmed by Individual F, an HP who added that no one could work in the room until corrective measures were taken. Individual A stated he asked Individual H, an Engineer for OPPD, why he was allowed to work in Room 15A about a month earlier and now the room was closed until corrective measures could be taken to lower the radiation level. Individual A advised that Individual H told him he would look into the matter and a short time later Individual H told him that on March 27, 1980, upper management had overridden the HPs (Health Physicists) and that they (Individual A and B) were sent into the room. Individuals A and B stated they interpreted this to mean that the radiation level was actually higher than they had been lead to believe and OPPD had intentionally mislead them and as a result they received higher radiation exposures than they expected. Individual B commented that on March 27, 1980, there were only two or three lead blankets on top of the pipe, however, they were working on the bottom side of the pipes.

Interview of Individual C

On May 15, 1980, Individual C, a Health Physicist for OPPD, stated he recalled that Individual A on March 27, 1980, requested that he conduct a radiation survey of Room 15A; however, explained that he had conducted a survey on March 26, 1980, posted his results, and told Individual A that he did not believe it was necessary to conduct an additional survey. Individual C stated that later Individual A complained to him that his dosimeter had a high radiation reading (180 mr) and Individual A demanded his TLD be read by a laboratory to determine if he received additional exposure. Individual C stated he agreed to submit Individual A's TLD to the laboratory within three days. Individual C advised that after Individual A left, he checked the daily pencil dosimeter log and discovered that Individual A had recorded his dosimeter reading as 100 mr, not the 180 mr reading Individual A had verbally claimed. Individual C stated that later he checked Individual A's TLD reading and found it was within normal limits adding that there was no evidence that he had received any radiation that was not expected. Individual C claimed that he did not state to Individual A or anyone that Room 15A was "too hot" to work in.

Interview of Individual D

On May 15, 1980, Individual D, an Engineer for OPPD, advised that on March 27, 1980, Individual A requested that a survey be conducted in Room 15A by a Health Physicist employed by OPPD. Individual D remarked that Individual C, an HP, had conducted a radiation survey in Room 15A on March 26, 1980, and as far as he knew nothing had changed in the room. Individual D stated that Individual C refused to conduct a second survey but that he (Individual D) did conduct a radiation survey in Room 15A to satisfy Individual A's request. Individual D advised that his survey had a significant correlation to the survey conducted on March 26, 1980, and told Individual A that he concurred with the survey conducted the previous day. Individual D explained, about 2 to 3 hours later he saw Individual A at which time Individual A made a humorous comment

that his dosimeter was reading 200 mr. Individual D remarked that he then decided to follow Individual A, about 2 or 3 minutes later and checked the daily pencil dosimeter log to determine what Individual A actually recorded in the log. Individual D stated that the log reflected that Individual A reported only receiving 100 mr not the 200 mr he verbally claimed a few minutes earlier.

Interview of Individual E

On May 15, 1980, Individual E, a QC inspector, claimed that on May 11, 1980, about 1930 hours he was assigned some work in Room 15A. Individual E stated that he contacted Individual H (Engineer, OPPD) and asked if a survey could be run in Room 15A while he was working in the room, to which Individual H concurred. Individual E stated he then contacted Individual F, an HP, who agreed to conduct the radiation survey in Room 15A. Individual E stated that during his work in Room 15A (about 4 to 5 minutes), Individual F stated that the radiation level was high and that everyone would have to leave the room until corrective action could be taken. Individual E stated later, about 2000 hours, he saw Individual A and told him about the high reading in Room 15A, that Individual F had reported.

Interview of Individual F

On May 15, 1980, Individual F, a Health Physicist, advised that on May 11, 1980, Individual E requested that he conduct a radiation survey in Room 15A. Individual F explained he accompanied Individual E to Room 15A and while Individual E started working in the room he conducted a radiation survey. Individual F stated that within 3 to 4 minutes he determined that the radiation level was high and that workers should not work in the room until corrective action could be taken. Individual F explained that corrective action, in his opinion, would include additional lead blankets placed on the pipes where the source of the radiation level was the highest. Individual F stated that the reading from the uncovered pipes at a distance of 18 inches was between 900 and 1000 mr/hr. Individual F advised a short time later he told Individual A that workers were not allowed in Room 15A without an HP present or until corrective action was taken.

Interview of Individual H

On May 15, 1980, Individual H (Engineer, OPPD) executed a signed statement wherein he stated that on May 11, 1980, he learned from Individual F that Room 15A had a high radiation level and no work should be done until corrective action could be taken. Individual H remarked about this same time (2000 hours) Individual A approached him and asked "Why is it that these guys are denied entry into Room 15A when the radiation is less than when I had to enter the room a month ago?" Individual H replied to Individual A that he did not know the answer but would try to find out. Individual H stated he privately talked to an HP, identified as Individual I, and asked him the question that Individual A had presented to him. Individual H remarked that Individual I told him that: The reason could be on

March 27, 1980, it was a "hot area" and for some reason upper management said it was okay to enter the room, or the reason could be that on March 27, 1980, somebody rewrote the radiation work procedure to allow an individual to receive a quarterly dose of radiation in one evening. Individual H explained that about ten minutes later he told Individual A what Individual I had told him and added that he did not agree with this explanation and suggested that he and Individual A check this out further with the HP's supervisor. Individual H explained that initially Individual A agreed to accompany him when they talked to the HP's supervisor, however, they were not successful in immediately contacting the HP's supervisor. Individual H remarked that a short time later he did contact the HP's supervisor, however, Individual A had gone off site to make a telephone call. Individual H claimed after he learned the circumstances surrounding the radiation level in Room 15A on March 26, 1980 and May 11, 1980, he contacted Individual A about one hour later to explain the situation, however, Individual A was not interested in the explanation. Individual H added that, if his comments to Individual A, were interpreted by Individual A wherein Individual A believed he was misled in March 1980, concerning the radiation level in Room 15A, it was purely unintentional. Individual H concluded that shortly after March 27, 1980, the lead blankets on the pipes were removed from the pipes, which would explain higher radiation levels on May 11, 1980.

Interview of Individual I

On May 16, 1980, Individual I, Health Physicist, OPPD, executed a signed statement wherein he recalled Individual H asking him on May 11, 1980, why the radiation level in Room 15A was different than the radiation level in 15A on March 27, 1980. Individual I stated that he told Individual H that on March 25, 1980, Room 15A had a high radiation level but that upper management, Individual J (Engineer, OPPD) ordered that work had to be done in the room. Individual I stated that he later heard that the pipes were flushed and additional lead blankets were installed over the pipes, that (in effect,) lowered the radiation level permitting work to continue in Room 15A. Individual I claimed that Individual H asked him about dose levels and Individual I advised he told Individual H that the daily radiation dose level was 300 mr/hr, however, a person could legally receive a quarterly dose in one day. During the interview it was pointed out that Individual H had interpreted his comments somewhat different than he had just stated. Individual I remarked that he could tell Individual H that upper management ordered the work to be done in Room 15A only after corrective action had been taken and that his comments regarding radiation doses were of a general nature.

Interview of Individual J

On May 16, 1980, Individual J, an Engineer, OPPD, advised that to the best of his memory, about 6 to 8 weeks ago, he scheduled some work in Room 15A at which time an HP (identification unknown) told him that the radiation level was too high for work to be done. Individual J recalled that he told the HP department that work had to be done in Room 15A and to take immediate action to lower the radiation level. Individual J

claimed he discussed the situation with the HP Department and later he personally went to the OPPD control room and asked that the pipes in Room 15A be flushed. Individual J stated the control room personnel agreed to flush the pipes in Room 15A for a period of only one minute due to a thermodynamic problem. Individual J explained that after the pipes were flushed, and additional lead blankets were added to the pipes he requested that the HP department conduct a survey. Individual J stated that the radiation survey was conducted on March 26, 1980, and the radiation had dropped to an acceptable safe level. Individual J emphasized he passed the situation regarding Room 15A onto Individual A's supervisor, on March 26, 1980.

Interview of Individual G

On May 15, 1980, Individual G (HP, OPPD) was interviewed wherein he stated that he overheard Individual A claim on May 13, 1980, while reading the results of the TLD, that he (Individual A) was cheated out of additional radiation levels. According to Individual G, Individual A contended that his dosimeter readings were higher than the TLD reading. Individual G explained that he did not fully understand Individual A's comments in that Individual A had received training in the reading of dosimeters and knew that dosimeter readings are subject to error and are not as accurate as a TLD.

Review of Individual A's Training Records

On May 15, 1980, a review of Individual A's training records disclosed that on February 13, 1980, he received training on the personnel dosimetry requirements and passed a written test on those requirements. In addition, Individual A's record reflects that he received a field practical factors test and displayed ability in reading the dosimeter and other related radiation equipment such as a teletector, and received a 92.5 test score.

Documents

The written statements, copies of the radiation surveys dated March 26, 1980, and May 12, 1980, along with the daily pencil dosimeter log dated March 26, 27, and 28, 1980, and the radiation work permit for Room 15A with attached log entries of Individuals A and B signatures indicating they read the work order and radiation survey, are being maintained in the Region IV offices.

Conclusion

This allegation is not substantiated in that the licensee did not knowingly mislead Individuals A and B into believing they received additional radiation levels. The licensee may however, have unknowingly lead Individual A and B into believing they received additional radiation levels. That Individual A was qualified to self monitor and that he personally recorded dosimetry readings for the day totaled 100 mr. There is no evidence that indicates Individuals A or B received additional radiation other than expected.

Allegation No. 2

Individual A, alleged that a shaving off a spent fuel rod was discovered in the cavity of the reactor after shutdown and it is presently stored in Room 29A.

Investigative Findings

An investigation consisting of a review of HP logs and inspection of rooms in the general area of Room 29 disclosed there is no room identified as 29A. Review of available records, however, disclosed that a small amount of metallic corrosion products with a very high radiation level was found in the cavity after the cavity was drained and was temporarily stored in a barrel with lead shielding in Room 29. Shipping records disclosed that this debris was forwarded to Barnwell, South Carolina, a licensed disposal site about five weeks earlier. This allegation is not substantiated. (D. L. Kelley, Reactor Inspector)

Allegation No. 3

Individual A, alleged that a seismic support, identified a ACH-356 was constructed of materials alleged to be weaker than the design that was originally called for.

Investigative Findings

Investigation disclosed that the pipe restraints in question (ACH-356) were part of the design package of M. O. 5540. The specific material in question was angle iron of dimensions 3" x 3" x 3/16". The bill of material and design drawing called for 4" x 4" x 1/4" angle iron. The inspector determined that the material used in the modification was as called for in the design package. The 3" x 3" x 3/16" material was found to be part of the air handling unit that was already in existence. The 3" x 3" x 3/16" angle iron was used as part of support base but was taken into account when the analysis was performed to determine what modifications were necessary to upgrade the above pipe restraint. This allegation is not substantiated. (D. L. Kelly, Reactor Inspector)

3. Other Investigative Findings

During the investigation of allegation No. 1, a review of the licensee's standing order No. T-8, disclosed that a routine radiation survey is required for Room 15A each month. A review of the monthly survey schedule disclosed that a survey was conducted in March 1980 and May 1980, for Room 15A, however, the monthly survey for April 1980, was not conducted for Room 15A. The monthly survey document dated April 29, 1980, reflects that the survey was not conducted because the key to Room 15A was not available. This is an infraction. (See Notice of Violation)