

APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-298/84-12

License: DPR-46

Docket: 50-298

Licensee: Nebraska Public Power District (NPPD)
P. O. Box 499
Columbus, NE 68601

Facility Name: Cooper Nuclear Station (CNS)

Inspection At: CNS, Brownville, Nebraska

Inspection Conducted: June 4-8, 1984

Inspector:

J. Blais Nicholas
J. B. Nicholas, Radiation Specialist

7/11/84
Date

Approved:

Blaine Murray
Blaine Murray, Chief, Facilities Radiological
Protection Section

7/12/84
Date

JJC

Z. H. Johnson
J. P. Jaudon, Chief, Project Section A,
Reactor Project Branch 1

7/23/84
Date

Inspection Summary

Inspection Conducted June 4-8, 1984 (Report: 50-298/84-12)

Areas inspected: Routine, unannounced inspection of the licensee's transportation and solid radioactive waste activities, outstanding open items, and nonlicensed training. The inspection involved 36 inspector-hours onsite by one NRC inspector.

Results: Within the three areas inspected, one violation was identified (transportation of licensed material, paragraph 5).

DETAILS

1. Persons Contacted

NPPD

- *P. V. Thomason, Division Manager of Nuclear Operations
- R. D. Alexander, Lead Electrician
- *R. L. Beilke, Training Manager
- W. E. Crawford, Assistant Maintenance Supervisor
- R. F. Drier, General Employee Instructor
- M. A. Gillan, Instruments and Controls (I&C) Maintenance Instructor
- *C. R. Goings, Regulatory Compliance Specialist
- M. D. Hannaford, Utility Man
- H. A. Jantzen, I&C Supervisor
- C. L. Kern, Quality Assurance (QA) Specialist I
- J. H. Kuttler, Health Physicist
- G. Mace, Plant Engineering Supervisor
- *R. J. McDonald, Chemistry and Health Physics Supervisor
- *J. M. Meucham, Technical Manager
- J. A. Mesher, Radioactive Waste Operator
- C. R. Moeller, Lead Performance Engineer
- J. P. Morris, ALARA Coordinator
- D. M. Norvell, Maintenance Supervisor
- R. L. Sherman, Mechanical Maintenance Instructor
- G. E. Smith, Senior QA Specialist
- S. J. Stiers, Administrative Support Supervisor
- L. R. Swanson, Lead Mechanic
- R. E. Wilbur, Division Manager of Nuclear Services
- K. R. Wire, Operations Manager
- V. L. Wolstenholm, QA Manager - CNS

Others Contacted

- *D. L. DuBois, NRC Senior Resident Inspector
- R. Rossi, Station Operator Instructor, General Electric (GE) Company
- J. Swanson, Chemistry and Health Physics Instructor, GE Company
- B. R. Thompson, Training Manager, GE Company

*Denotes those present during the exit briefing on June 8, 1984.

2. Scope of Inspection

The purpose of this inspection was to review the circumstances surrounding a reported violation of NRC regulatory requirements concerning the shipment of radioactive waste materials, review the licensee's status on outstanding open items in the area of chemistry/radiochemistry, and review the licensee's nonlicense training program for the period December 1, 1983, to May 31, 1984.

3. Licensee Action on Previous Inspection Findings

(Closed) Open Item (298/8227-04): Licensee's Internal Audits - This item involved the licensee not including on the QA audit team, for radiochemistry audits, a member trained and knowledgeable in radiochemistry procedures and activities at nuclear power facilities. Several of the QA department auditors have completed the GE courses for chemistry and health physics technicians presented at the CNS site. The licensee has committed to using these auditors with specialized training on audit teams performing audits requiring specialized technical knowledge in chemistry/radiochemistry or health physics. This item is considered closed.

(Closed) Open Item (298/8227-05): Quality Control of Radiological Analytical Measurements - This item involved the licensee not designating, in any procedure, who was responsible for managing and conducting the radiochemistry quality control program. The NRC inspector reviewed Procedure CP-8.1, "General Laboratory Instructions," Revision 4, March 27, 1984, and found that the licensee had specified that the Plant Chemist under the direction of the Chemistry and Health Physics Supervisor was responsible for administering the laboratory quality control program. The licensee's actions were considered satisfactory. This item is considered closed.

(Closed) Open Item (298/8227-06): Frequency of Quality Control of Radiological Analytical Measurements - This item involved the licensee not clearly defining the frequency of calibration and performance checks on specific counting room instruments and making their frequencies consistent with those specified in individual instrument procedures. The NRC inspector reviewed Procedure CP-8.2.1, "Chemistry Analysis and Instrument Calibration Schedule," Revision 9, March 16, 1984, and verified that the licensee had clearly defined the frequency of calibration and performance checks of all laboratory equipment including counting room instruments and that these frequencies were consistent with those specified in individual instrument procedures. This item is considered closed.

(Closed) Open Item (298/8227-08): Radioactive Standard Preparation - This item involved the lack of a detailed procedure for preparation of radioactive standards. The NRC inspector reviewed Procedure CP-8.9.3,

"Radioactive Source Preparation," Revision 0, March 13, 1984, and found the procedure satisfactory to resolve the NRC's concerns in this area. This item is considered closed.

4. Open Items Identified During This Inspection

<u>Open Item</u>	<u>Description</u>	<u>Reference Paragraph</u>
298/8412-02	CNS Training Department Training Program	6.a
298/8412-03	Offsite Technical Support Personnel Training Program	6.b
298/8412-04	General Employee Training (GET) Program	6.c
298/8412-05	Mechanical Maintenance Training Program	6.d
298/8412-06	I&C and Electrical Training Program	6.e
298/8412-07	Engineering Training Program	6.i
298/8412-08	QA Training Program	6.j

5. Radioactive Waste Shipment

The NRC inspector reviewed the licensee's radioactive waste shipment activities and, specifically, the circumstances concerning Radioactive Waste Shipment 84-12 shipped to Beatty, Nevada, on May 10, 1984, to determine compliance with 10 CFR Parts 20 and 71 and 49 CFR Part 173. The NRC inspector verified that the licensee had indeed recorded radiation survey readings greater than regulatory limits on the shipment survey form and had authorized the shipment to leave the plant not recognizing that the survey results exceeded the regulatory limits.

10 CFR Part 71.5(a), "Transportation of Licensed Material," requires that no licensed material shall be transported outside of the confines of the plant unless the requirements of the regulations appropriate to the mode of transportation of the Department of Transportation in 49 CFR Parts 170 through 189 are met. Section 173.441, "Radiation Level Limitations," states in paragraph (b)(3) that the radiation level shall not exceed at any time during transportation 10 millirem per hour at any point 2 meters (6.6 feet) from the vertical planes represented by the outer lateral surfaces of the transport vehicle.

On May 15, 1984, the licensee was notified by the state of Nevada, Department of Human Resources, Health Division, that on May 14, 1984, a shipment of radioactive waste (No. 84-12) from CNS was received at the state disposal site at Beatty, Nevada, and was found to have external radiation levels at 2 meters from the sides of the trailer in excess of 10 millirems per hour. The NRC inspector noted that the licensee had processed the required shipping forms and had recorded external radiation levels at 2 meters from the left side of the trailer of 20 millirems per hour and at 2 meters from the right side of the trailer of 15 millirems per hour. Upon arrival at the state low-level waste disposal site at Beatty, Nevada, the site inspectors noted during their survey respective external radiation levels at 2 meters of 14 millirems per hour and 13.5 millirems per hour. This situation constituted a violation of U.S. Department of Transportation regulation 49 CFR Part 173.441(b)(3) and NAC 459.910(2) of the Nevada Regulations for Radiation Control which governs the use of state-owned areas for disposal of radioactive waste.

The NRC inspector informed the licensee that failure to meet the requirements of the U. S. Department of Transportation regulations constitutes a violation of 10 CFR Part 71.5(a). (Violation 298/8412-01)

6. Nonlicensed Personnel Training

The NRC inspector reviewed the licensee's nonlicensed training program to determine compliance with the Updated Safety Analysis Report (USAR) and CNS Technical Specification commitments, 10 CFR Part 19.12 requirements, and the recommendations of Items I.A.1.1 and II.B.4 of NUREG-0737, ANSI N18.1-1971, and Regulatory Guides 1.8 and 8.13.

a. Training Department

The training department has been designated responsible for the training of CNS plant personnel in both nonlicensed and requalification training. The direction and guidance of the CNS training onsite is to come from the training department except for the QA and Security departments which wish to retain the responsibility to train station personnel in their respective areas of responsibility.

The training department organization consisted of 12 positions. At the time of the inspection, only 7 of the 12 department positions were filled by licensee employees. The seven positions filled with CNS employees included the training manager, department secretary, one educational specialist, operations training supervisor, and three training instructors. Some of the remaining positions were being filled under a contract with the GE Company. Each instructor was responsible for various areas of the training program which

includes GET, chemistry and health physics training, I&C and electrical training, mechanical maintenance training, licensed operator training, nonlicensed operator training, fire brigade training, and radiological response emergency training. At the time of the inspection, GE Company had onsite, under contract, a training manager, a chemistry and health physics instructor, and two instructors devoted to nonlicensed station operator training and licensed operator requalification training. The training department had approval to add three additional GE Company instructors under contract to help develop the CNS training program to the level acceptable for Institute of Nuclear Power Operations (INPO) accreditation.

At the time of the inspection, the licensee was in the process of rewriting the CNS training manual and did not provide the NRC inspector with a draft copy for review. The training department was in the process of developing a formal program and had not completed departmental procedures, training instructions, lesson plans, or training objectives. The NRC inspector reviewed the licensee's Procedure AP-1.5, "Selection and Training of Station Personnel," Revision 11, January 24, 1984, and found that it did not contain a comprehensive description of the training department activities. The training for each station department was outlined in the procedure attachments and consisted of appropriate plans and procedures related to performing the various activities within particular craft responsibilities. The training department had not provided direction and guidance for the various departmental training programs. Prior to August 1983, the training department had only limited involvement with departments such as mechanical maintenance, I&C and electrical, engineering, QA, and chemistry and health physics. The training department had not assisted in the development and review of departmental training programs. The lack of direction and guidance had resulted in the formation of a variety of departmental training programs. The various station departments had not written a training procedure providing sufficient information regarding the content, format, scheduling, objectives, and a means to evaluate the training received by their staff. The station departments had not established training coordinators to monitor departmental training. The licensee had not established a uniform method regarding the retention of training records by the training department and other onsite departments. There was considerable variation in the format and contents of training records. Many records were fragmented and incomplete. The NRC inspector noted that in the past a well documented program had not been established to account for on-the-job training (OJT) within the various station departments. Since August 1983 with the help from contract personnel furnished by GE Company, the training department has made vast improvements in the areas mentioned.

The NRC inspector noted that a written training program had not been developed for the training department instructors and the present instructor staff had not received any formal training on how to present training materials.

The NRC inspector reviewed the licensee's USAR and Technical Specifications and noted that these documents had not been updated to provide a detailed description of the training programs for nonlicensed personnel, shift technical advisors (STAs), mitigating core damage, fire protection training, and radiological emergency training.

This item is considered open (298/8412-02) pending:

- ° development and approval of a CNS training manual,
- ° completion of training and certification of training department instructors, and
- ° update of the USAR to provide a detailed description of the CNS training program and requalification program for all nonlicensed station personnel.

b. Offsite Support Staff

The NRC inspector determined that a written corporate training program for the offsite support staff at the corporate office had not been established. A limited training program had recently been initiated by the offering of a 40-hour course on CNS plant design and orientation which was written and taught by GE Company consultants. However, a formal written technical and nontechnical training program and requalification program which includes defined goals, objectives, schedules, lesson plans, methods of evaluating the effectiveness of the training, and methods for record retention had not been developed at the time of the inspection. The responsibility for development and management of a comprehensive corporate technical and nontechnical training program for offsite support staff should be under the direction and guidance of a central organization such as the corporate training coordinator.

This item is considered open (298/8412-03) pending development and implementation of a formal training and requalification program for corporate offsite technical support personnel.

c. General Employee Training

The NRC inspector reviewed the licensee's GET program to determine compliance with the licensee's Technical Specifications which require adherence to ANSI N18.1-1971. This training is conducted initially for all new station employees whose assignments require unescorted access to the plant and is composed of viewing two video tapes followed by a lecture covering the required topics as specified in ANSI N18.1-1971. The training is documented by an examination. The GET retraining is required every 2 years except for training in station security procedures which requires retraining annually. Prior to the inspection, the GET was conducted by the health physics department. However, since the hiring of the new general employee instructor on March 1, 1984, the training department has assumed the responsibilities of teaching GET. The general employee instructor was using a lecture outline which helped to ensure that each class was presented similar information. The licensee indicated that indoctrination training in the particular dangers of prenatal radiation exposures for all women was included in the GET if women were present in the class. There was no program to assure that all supervisors and persons who work with women received this training as specified in Regulatory Guide 8.13. The NRC inspector interviewed several women employees and departmental supervisors and foremen and they all indicated an awareness to the prenatal radiation exposure dangers.

The NRC inspector interviewed the new general employee instructor to determine the GET program status. The GET instructor was in the process of rewriting the GET course description and lesson plans. Copies of these documents were not available for review at the time of the inspection. These documents will be reviewed during future inspections.

This item is considered open (298/8412-04) pending development and implementation of an approved GET program for new hires and requalification of CNS employees which includes detailed lesson plans, goals and objectives, training and retraining schedules, methods of evaluating training efforts, and records of training performed.

d. Mechanical Maintenance Training

The NRC inspector reviewed the training program for the mechanical maintenance department. This department includes personnel classified as machinists, mechanics, welders, and utility men. Training of maintenance department personnel had been performed under the direction of the maintenance supervisor by the shop foreman and/or one of the mechanics. The training consisted of viewing a

series of 47 NUS Corporation produced video tapes covering various areas of mechanical maintenance. Most of the training had been performed as OJT and scheduled when time permitted. The OJT was not formally scheduled and seldom documented; however, offsite training and video tape viewing were found to be documented in individual personnel training files. Specialized qualification training had been provided by the utility foreman and mechanical maintenance training instructor for crane operators. The NRC inspector determined that the mechanical maintenance department had not developed a structured training program or written a maintenance department training procedure which would establish training goals and objectives and outline the qualification criteria for maintenance personnel to qualify to perform specific job tasks.

In January 1984, the training department had hired a mechanical maintenance training instructor. The NRC inspector interviewed the instructor to determine the status of the present mechanical maintenance training program. The mechanical maintenance instructor was in the process of developing the mechanical maintenance training program which would include a course description and lesson plans. Copies of these documents were not available for review at the time of the inspection. The licensee approved documents will be reviewed during future inspections.

This item is considered open (298/8412-05) pending development and implementation of an approved mechanical maintenance training program for CNS maintenance personnel which includes detailed lesson plans, goals and objectives, qualification or certification criteria, training and retraining schedules, methods of evaluating training efforts, and records of training performed.

e. I&C and Electrical Training

The NRC inspector reviewed the training programs for the I&C and electrical departments. The I&C department in the past had performed procedure training in accordance with Procedure AP-1.5 which was conducted by the I&C supervisor. The I&C supervisor documented this training and maintained the training records. The I&C supervisor qualified the department technicians on various surveillance procedures using the technicians performance record. Much of the training had been performed as OJT and scheduled on an "as needed basis." The I&C supervisor had presently qualified eight I&C technicians.

The training department had contracted with GE Company to develop and conduct a training course for I&C technicians. This course was designed to be taught over a 35 day period and cover specific I&C systems. The course was being taught onsite at the time of the

inspection and all I&C technicians will complete the course by the end of July 1984. The training was being documented and evaluated by examinations and recorded test scores.

The NRC inspector reviewed the training program for the electrical maintenance department and found no formal documented training being performed. The training that was being performed was rarely scheduled and was performed as OJT on an "as needed basis." The NRC inspector could not find any qualification criteria or records for electricians.

In January 1984, the training department had hired an I&C and electrical training instructor. The NRC inspector interviewed the instructor to determine the status of the present I&C and electrical training programs. The instructor had written a draft I&C procedure qualification outline and had recently implemented this training and was maintaining performance records on each I&C technician. The NRC inspector noted that no approved course outline or class schedule had been developed for either the I&C department or the electrical department. The I&C and electrical instructor was in the process of developing an I&C and electrical training program. Copies of documents describing this program other than the draft outline for I&C procedure qualification were not available for review at the time of the inspection. The licensee approved documents will be reviewed during future inspections.

This item is considered open (298/8412-06) pending development and implementation of an approved I&C and electrical maintenance training program which includes detailed lesson plans, goals and objectives, qualification or certification criteria, training and retraining schedules, methods of evaluating training efforts, and records of training performed.

f. Chemistry and Health Physics Training

The NRC inspector reviewed the training program for chemistry department and health physics department technicians. In the past, both departments had conducted procedure training and maintained a qualification procedure performance record on each technician. The training had been conducted by the respective department supervisors and qualified technicians as OJT and scheduled on an "as needed basis." The NRC inspector noted that neither department had developed a formal training program or written departmental training procedures.

The training department had contracted with GE Company to develop and conduct a training program for chemistry and health physics technicians. A qualified chemistry and health physics instructor

from GE Company has been assigned to the CNS training staff to conduct the technician training and develop the site specific training program. The GE technician course for chemistry and health physics personnel will be completed by all chemistry and health physics staff in July 1984.

The NRC inspector interviewed the chemistry and health physics training instructor to determine the present status of the chemistry and health physics training program. The instructor is presently implementing the initial short-term program composed of a 2-week course for chemistry technicians covering theoretical aspects of chemistry/radiochemistry and a 2-week course for health physics technicians covering basic principles of health physics. The chemistry and health physics instructor was in the process of developing the long-term program which would provide site specific training material for training BWR chemistry and radiation protection to plant management, engineers, operators, and technicians.

This item will remain open (298/8227-03) pending development and implementation of an approved chemistry and health physics technician training program.

g. Shift Technical Advisor Training

The NRC inspector reviewed the program for STA training to determine if it met the requirements of NUREG-0737. The NRC inspector noted that 12 CNS engineers had received STA training during the period August-December 1983. The STA training course was developed and conducted by GE Company under contract. The STA program appeared to meet the requirements of NUREG-0737; however, a requalification program had not been established.

h. Fire Protection Training

The NRC inspector reviewed the fire brigade training program to determine compliance with the licensee's Technical Specifications. The NRC inspector found that the licensee had an approved fire protection training program which appeared to meet the requirements of Technical Specification 6.1.4. The program appeared to be well organized and administered. The licensee had established an annual training schedule to cover all aspects of the fire protection program. A review of the training records indicated that the training was being completed as per the Technical Specifications and fire drills were being held according to procedure frequency and included all shifts. The training records were well organized and documented the program satisfactorily.

i. Engineering Training

The NRC inspector reviewed the training program for the onsite engineering program. The NRC inspector found the licensee had issued an engineering training schedule which designated specific topics to be discussed at the weekly training sessions. The topics were taken from the STA training program and broken into departmental responsibilities to provide instructors for the assigned topics and prepare the lecture material. Lesson plans were available for most of the topics from the GE nuclear engineering course. The weekly training sessions were documented in the training records by attendance but no examinations were given to evaluate student comprehension of the lecture material. The NRC inspector determined that the engineering department had not written a departmental training procedure which would establish training objectives and provide qualification criteria for engineering personnel. The NRC inspector noted that the training department had not provided in its organizational structure a specified training instructor for engineering. However, it was determined that the engineering department training was to be incorporated into the STA type training and would be conducted by a consultant or by the station operator instructor. The training department was in the process of developing a STA requalification program in conjunction with an engineering department training program. An approved course description and lesson plans, other than the STA training course syllabus, were not available for review at the time of the inspection. The licensee approved documents will be reviewed during future inspections.

This item is considered open (298/8412-07) pending development and implementation of an approved STA requalification training program and engineering department training program which includes detailed lesson plans, goals and objectives, qualification or certification criteria, training and retraining schedules, methods of evaluating training efforts, and records of training performed.

j. QA Training

The NRC inspector reviewed the training program for the QA department auditors and training given by the QA department to other CNS staff. The NRC inspector reviewed QAI-5, "Quality Assurance Instruction General Guidelines - QA Audits," Revision 17, May 1, 1984, and QAI-6, "Personnel Qualifications and Training for QA Assignments," Revision 10, October 5, 1983. The NRC inspector also reviewed the QA training program, QA indoctrination training outline, QA training records for selected CNS staff, and held interviews with the QA manager and other members of the QA staff.

The QA department had presented several training courses on QA indoctrination and QA requalification during the inspection period. Personnel from other CNS departments attended these courses along with QA department personnel. In addition to this training, several of the QA staff had attended specialized contracted onsite training in chemistry, health physics, and I&C and contracted vendor offsite training related to the QA inspection effort. The lead auditor certification program included some of the contracted training.

The NRC inspector noted that the licensee had not developed an approved QA training program for CNS personnel indoctrination and requalification and a formal certification training course for QA auditors.

This item is considered open (298/8412-08) pending development and implementation of an approved QA department training program for indoctrination and requalification of CNS personnel and an approved training program for QA auditors which prepares them for lead auditor certification. These training programs should include detailed lesson plans, course objectives, qualification or certification criteria, methods of evaluating training efforts, records of training performed, and schedules for personnel training and retraining.

k. Administrative Services Training

The NRC inspector interviewed the administrative support supervisor and reviewed the training provided to the office staff. The training provided to the office staff was consistent with Procedure AP-1.5. The required procedure reading was documented in the individual personnel training files. The NRC inspector determined that five members of the administrative services staff had completed the secretarial skills course and the administrative support supervisor had completed the general supervisory skills course. Both courses had been conducted by the NPPD corporate training department. OJT on the operation of new office equipment was given by manufacturer's representatives upon installation. This training was seldom documented.

1. General Observations

The following are general observations of the licensee's training program derived from the NRC inspector's interviews with approximately 25 CNS personnel and review of the present training program:

- ° The licensee appeared to maintain a positive attitude towards training. Funds were made available to staff a training department and develop a training program which is to meet the criteria for INPO accreditation.

- ° An adequate approved nonlicensed training program had not been written or implemented.
- ° The station training department had not provided direction and guidance in establishing departmental training programs.
- ° Most CNS departments had not established a written technical training program which included course objectives, lesson plans, qualification or certification criteria, methods of evaluating training efforts, records documenting training performed, and schedules for training and retraining.
- ° Training instructors should attend formal training on teaching techniques and methods of presentation.
- ° Training facilities were located in the emergency operations facility and appear to be marginal. Classrooms and instructor office space were limited and noise from hallways and adjacent areas caused distraction in the classrooms and instructors' offices.
- ° The technical library that was available for personnel was not maintained in one location and in an organized controlled manner in the training area. Library materials of various kinds were found in several locations throughout the plant.
- ° An approved training program had not been developed for the station managers, superintendents, and supervisors.

No violations or deviations were identified.

7. Exit Briefing

The NRC inspector met with the licensee representatives identified in paragraph 1 of this report and the senior resident inspector at the conclusion of the inspection on June 8, 1984. The NRC inspector summarized the scope of the inspection, discussed the transportation of licensed material violation, closed four previously identified open items, and presented the requirements for resolving the identified open items as discussed in paragraph 6 of this report.