

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-483/84-30(DRP)

Docket No. 50-483

License No. NPF-25

Licensee: Union Electric Company
Post Office Box 149 - Mail Code 400
St. Louis, MO 63166

Facility Name: Callaway Plant, Unit 1

Inspection At: Callaway Site, Steedman, MO 65077

Inspection Conducted: June 3 through July 27, 1984

Inspector: J. H. Neisler

Approved By: *P.R. Pelke for*
W. L. Forney, Chief
Projects Section 1A

9/11/84
Date

Inspection Summary

Inspection on June 3 through July 27, 1984 (Report No. 50-483/84-30(DRP))

Areas Inspected: Routine inspection by the senior resident inspector of licensee actions relative to IE Bulletins; allegation followup; observation of fuel load activities; observation of completed installations of electrical trays and cables, pipe supports and restraints; and penetration installation. The inspection involved 160 inspector-hours onsite by the resident inspector including 20 hours during non-regular hours.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Principal Licensee Employees

D. F. Schnell, Vice President - Nuclear
*W. H. Weber, Manager, Nuclear Construction
R. Powers, Assistant Manager, QA
*R. Veatch, Supervisory Engineer, QA
J. Laux, Supervisory Engineer, QA
*C. Plows, QA Consultant
*H. Millwood, QA Consultant
L. Cunningham, QA Consultant
R. Stright, Licensing Consultant
A. Passwater, Licensing Manager
R. Hamilton, QA Consultant
M. Doyne, General Superintendent, Nuclear Construction

Contractor and Other Personnel

C. C. Waggoner, Site Manager, Daniel International
*R. Glassner, Compliance Supervisor DELCON
J. Ready, Training Supervisor, Quality Services, Daniel International
R. Ruggles, NDE Level II, Daniel International
M. Majors, Level II Mechanical QI, Daniel International
*J. J. Long, Project Welding Manager, Daniel International
*J. F. Freeman, Project Electrical Supt., DELCON
W. F. Reilly, SNUPPS

*Denotes those personnel attending exit interviews.

2. Inspection and Enforcement Bulletins

(Closed) IEB 84-02: Failure of GE Type HFA Relays. Bechtel rework plan E-017-3, Rev. 1, required Class IE Type HFA relays to be replaced with GE Century series relays and for non-Class IE relays to either be replaced or have their coils replaced. Work is complete for Class IE relays. Type HFA relay with lexan coil failures were reported pursuant to 10 CFR 50.55(e) on February 12, 1981, and closed in NRC Inspection Report 483/83-33. This bulletin is considered to be closed.

3. GE Metal Clad Vertical Lift Switchgear (AITS-F03-026963)

(Closed) During a Region IV vendor inspection at the Medium Voltage Switchgear Business Section of the General Electric Company, it was determined that deficient vertical lift metal-clad switchgear had been supplied to numerous generating stations. All customers had been notified; however, it was not apparent during the vendor inspection that all had responded. An Office of Inspection and Enforcement letter dated June 2, 1983, requested regional followup action to ensure that the applicable sites were aware of the deficiency and that appropriate corrective actions were taken.

Re-qualification tests indicated that the short circuit bracing designs on some vertical lift metal-clad switchgear do not have their intended short circuit withstand (momentary) capability of 80,000 amperes. The main bus and runback supports in these designs were unable to withstand the assigned full short circuit rating without some damage to the bus supports and potential additional problems due to the weakening of the supports. GE provided field modification kits for switchgear which require high withstand capability.

The inspector reviewed rework plan RE-009-C, Rev. 1, which details the GE recommended modifications for upgrading bus bar bracings and supports to their design momentary short circuit withstand capability of 80,000 amperes. The completed rework covered 4.16KV switchgear busses NB01, NB02, PB03 and PB04 at Callaway. This item is considered to be closed.

4. Allegations

- a. ATS RIII-84-A-0081; ATS RIII-84-A-0082. Region III was contacted by Government Accountability Project (GAP) representatives regarding allegations by two individuals of construction deficiencies at Callaway Unit 1. The allegations provided by GAP and the inspector's review of each allegation are as follows:

- (1) The allegeder stated that he was intentionally exposed to radiation by radiographers. "They...keep aiming these radiograph x-ray machines at me...It happened a couple more times...I'd go in a little place and come back out and it would be on the opposite wall...They weren't taking any pictures. I asked them. And a couple of times I'd just walk by and they would flash an x-ray machine at me, I assume just to give me radiation...I say flash because it had a light that flashes...It's a white light that flashes. White light flashes when the x-rays are emitted." The allegeder stated once when he was on the 1988' level that the radiographers plugged in their machine and while trying to expose him to radiation they turned the power up so high the lights went out. He stated that these incidents were not job related, but because he was "in an environmental group...somebody thought they would run me off".

This allegation was not substantiated. No x-ray machines are used at Callaway. Radiography at Callaway is performed with a Tech-Ops Model 660 radiography camera using an Iridium-192 source. Isotopic radiography sources used in construction are omnidirectional and cannot be "aimed". The radiography cameras require manual operation to position the source for radiographing an object, have no provisions for plugging into an electrical system, nor is the intensity of an Iridium-192 source adjustable; therefore, power cannot be turned up to cause the electric lights to go out. The inspector determined that radiography was generally performed during the third shift, not on the day shift when the allegeder stated he was working. On those occasions when

it was necessary to perform radiography on other than the third shift, procedures require the area be marked with ropes/tape and signs and cleared of all personnel. Flashing lights were not used to mark a radiography area. In addition, the inspector determined that the alleged's normal duties did not take him into the power block.

- (2) The alleged stated that all plans for the plumbing drains had been lost.

Plumbing drains are not safety related, but the inspector examined drawings of plant drain systems in five file cabinets. In addition, the licensee performed an inventory of drawings of the plant drains in the Daniel (DIC) engineering office at the inspector's request. The inventory revealed more than 130 different drawings on hand. Drawings are also on file in the licensee's operations organization, QA organization, engineering, SNUPPS, Bechtel and at DIC document control and Quality Services organization. The inspector determined that the plumbing drain plans had not been lost.

- (3) The alleged stated that in 1980-1981, cables were sabotaged (cut). The inspector reviewed licensee Event of Interest Reports relative to cables that had been cut during the period 1980-1984. Cables identified as having been cut due to vandalism, sabotage, malicious mischief or through personnel error are:

Class IE cable IEJ112BA was found with the end cap cut off on January 25, 1980. The cable had been pulled and coiled but not terminated on January 22, 1980. The end cap was replaced and the cable terminated as scheduled. The damaged cable was reported to the NRC on January 25, 1980.

Class IE cable 1SAZ02KA. On February 25, 1981, a three inch long section of one conductor was found to have been cut from this cable approximately one foot from its terminal point. The cable was reterminated. This item was reported to the NRC on February 25, 1981.

Class IE cable IEMG13AB. This partially pulled and coiled cable was found cut in half on August 12, 1981. The cable had not been terminated but was coiled in the tray. The cable was replaced with a new cable. This item was reported to the NRC on August 13, 1981.

Class IE cable 4SAZ01SA. This cable damage was discovered during testing when it failed a continuity test on February 8, 1983. Investigation of lack of continuity showed that the cable had been cut in half. A new cable was installed. The NRC was informed February 18, 1983.

Class IE cable 1B8R37BB. This cut cable was discovered on February 16, 1983. The cable was replaced with a new cable. The NRC was notified February 18, 1983.

In addition to the five safety related cables above, six nonsafety related cables were found cut during the 1980-1984 period.

Investigations by the NRC resident inspectors, the licensee and the contractor did not determine if cable damage was due to vandalism, deliberate sabotage, malicious mischief or inadvertent cuts caused by other work in the area.

Daniel Quality Services completed a 100% reinspection of safety related cables November 1, 1982. The NRC electrical inspectors completed an inspection of filled cable trays February 3, 1984 (Report 483/84-06). No damaged or cut cable was found during the inspection.

The allegation that cables had been cut was substantiated; however, the cause(s) could not be determined.

Since cables that were cut in 1980-1981 have subsequently been inspected by quality control inspectors, have been tested during preoperational testing and have been inspected at least 18 times since 1981 by the NRC as shown by inspection reports filed since 1981; this allegation is considered to be closed.

- (4) The allegor stated that he overheard concrete inspectors complaining of concrete being poured on top of ice during the winter 1982-1983. The concrete pours were for outside slabs and some attempts were made to remove the ice. The allegor noted that "sometimes they would meet their temperature requirements by having it covered...take the air temperature. And if it was over 40 degrees they would pour concrete, but yet the ground was frozen solid, but it was documented as acceptable temperature..."

The allegor did not know if nonconformance or deficiency reports were ever written on this condition.

The inspector examined concrete placement records (pour cards) of all concrete pours made during the winter months of 1981-1982 and 1982-1983. For the purpose of this report winter months are November, December, January, February and March. No safety related outside concrete slab pours were made during either winter. Additionally, the inspector reviewed NRC civil inspection reports covering 1976 through 1983 which did not identify any concerns regarding placement of concrete on ice. This allegation was not substantiated. This allegation is considered to be closed.

- (5) The alleged stated that "Installed and approved electrical cables in the auxiliary and diesel generator building were damaged by people climbing on the cables. This 'traffic' caused damage to the cable jackets." The alleged recalled observing this condition on black colored cables in the auxiliary building.

Safety related cables at Callaway are red, white, blue, and yellow. Black is the designated color for nonsafety related cables. Raceways are color coded to match the division colors carried by the cables. The inspector visually inspected safety and non-safety related cables in trays on the 1974', 1988', 2000', 2026' and 2047' levels in the auxiliary building, in trays from 2015' to the 2047' level in the reactor building and in the diesel building. No damaged cables were identified. The contractor performed a 100% inspection of cables in trays in November 1982. The NRC inspected electrical cables in the auxiliary feed system during the Integrated Design Inspection (483/82-22); during electrical walkdown inspection (483/84-06); and during inspections numbers 483/81-20, 483/81-25, 483/82-10, 483/82-13, 483/82-15, 483/82-19, 483/82-20, 483/83-03, 483/83-05, 483/83-11, 483/83-14, 483/83-15, 483/83-19, and 483/84-06. The inspector reviewed records of gang box meetings where workers were instructed not to climb on plant equipment.

This allegation was not substantiated and is considered to be closed.

- (6) The alleged stated that "Many times the holes were drilled oblong, instead of round, into the steel plates. This condition could not be readily determined as washers covered the holes. This went on for a long time before they decided it was a problem and reinspections made."

Nonconforming surface mounted plates were identified by the licensee and reported to the NRC pursuant to 10 CFR 50.55(e) on May 19, 1980. A reinspection of all surface mounted plates was performed as stated by the alleged. Nonconforming plates, including plates in which holes did not meet specifications, were reworked. Quality inspectors were retrained and provided with new more comprehensive inspection checklists. The inspector examined Daniel Procedure WP-100, "Installation of Post-Pour Embedded Items", to verify that the requirement for the foreman to sign-off each plate upon completion of the installation and for the quality inspector to physically identify each acceptable plate installation had been included in the procedure.

The inspector reviewed noncompliances and their respective corrective actions pertaining to surface mounted plates in inspection reports 483/80-09 and 483/82-19.

A reinspection of surface mounted plates installed by the second shift ironworkers was conducted by the licensee during July and August 1982 in response to an NRC finding in report number 483/82-19.

Since the allegor stated that problems with surface mounted plates occurred prior to the reinspection of all the plates and the nonconforming plates have been reworked to an acceptable condition, crafts and quality inspectors were retrained and certified and only one item of noncompliance involving one plate has been identified since 1980, the inspector has determined that the plates meet the design criteria at this plant.

This allegation is considered to be closed.

- (7) "No inspector training program existed at Callaway until recently."

The inspector reviewed the following:

- . Daniel Administrative Procedure AP-VII-01, "Selection, Training, and Indoctrination of Quality Personnel", Rev. 0, dated May 17, 1975, through Rev. 9, dated July 3, 1984.
- . Training and qualification records for 15 inspectors who where working at Callaway prior to 1980. Each record indicated that the individual's training had been conducted in accordance with Daniel Administrative Procedure AP-VII-01.
- . During the NRC Region III Construction Assessment Team inspection (483/82-03), twenty-one randcmly selected quality control personnel were formally interviewed by NRC inspectors. The personnel interviewed included individuals form each construction inspection discipline.

Each interviewee was asked his opinion of the adequacy of the inspection training program. Each interviewee stated that he/she considered the training and indoctrination program to be adequate to prepare them to perform inspections in their respective disciplines.

- . The implementation of the Callaway Quality training program was inspected by the NRC in 1978 (Inspection Report No. 483/78-09). The inspection consisted of the review of the training procedures, training, experience and qualification records, orientation courses, records maintenance and licensee audit program relative to training and qualification of personnel. The inspection concluded that the QA/QC training program met the requirements of the NRC and PSAR commitments in effect at that time.

Based on review of archival revisions of Daniel training procedures showing that a training program has existed since 1975, review of training and qualification records, interviews with QA/QC personnel, and review of previous NRC inspection reports, this allegation was not substantiated and is considered to be closed.

- (8) The individual stated he was involved in pouring concrete for a fuel transfer canal sump hole. The individual stated the tank that was placed in the hole was improperly mounted and the tank broke loose from the mounting studs. The individual described the mounting studs as being inadequate to hold the tank. The individual was also concerned that the repairs to the tank caused a concrete "cold joint" which could cause the tank plating to rupture.

The "tank" identified by the allegor is the liner for the upending pit. During the placement of concrete around the liner the anchorage for the liner failed, permitting the liner to float on the concrete. This incident was documented on NCR number 2SN-0075-C. The approved corrective action was to remove the fresh concrete in the area of the liner, prepare a cold joint according to Bechtel Specification No. 10466-C-103(2) and Daniel International Work Procedure WP-110, replace the pit liner, and place fresh concrete in the area around and beneath the liner. The corrective action was reviewed and accepted by the architect/engineer. The allegor was correct in stating the liner became detached during the concrete placement; however, the contractor's corrective action was in accordance with approved procedures and reviewed and accepted by the architect/engineer. Since the fuel pool liner is leak chased and not a Category 1 component, the inspector has no further concerns in this area and considers this allegation to be closed.

- (9) The allegor stated that during 1980, a concrete inspector (not identified) told the allegor of voids in the reactor building liner plate. The concrete inspector "took a piece of rebar and knocked on the plates...could tell the difference with the hollow ring effect in some places." The allegor thought this observation was made on the reactor building west at elevation 2047' and possibly lower on the same side.

This item was addressed in inspection report number 483/84-22. It is common to have a slight separation, or no bond, between the liner plate and the concrete. Generally, this separation is only a fraction of an inch and results from a combination of concrete shrinkage and dimensional changes in the liner plate due to temperature. This slight separation is sufficient to give a hollow sound when tapped with a hammer, or similar object, especially when contrasted with the sound emitted when tapping an area backed by a stiffener angle embedded in the concrete.

Hollow sounds in the liner plate have been investigated twice previously. Once as a result of Daniel QC identification and once at the request of the resident inspector. In both instances, the architect/engineer's evaluation indicated that the hollow sounds were not the result of voids behind the liner.

Subsequent to the containment structural integrity test, walk-downs by the resident inspector and a region based inspector did not identify deformations in the liner plate that would indicate unacceptable voids behind the liner plate. No deformations in the liner plate were observed at the 1947 level or below.

The review of previous investigations at Callaway and Wolf Creek and other sites in Region III resulted in a determination that lack of bonding between liner plates and concrete would not have an adverse effect on containment integrity. This allegation is considered to be closed.

- (10) The allegor stated, in part, that; "the welding department is required to notify QC when structural steel was to be welded. However, QC was notified in 1975 and have not been called since. As a result, welders just went around and welded wherever they wanted...it says in QCP-113 that QC will be notified when structural steel will be welded...since QC was not notified a lot of welds were concreted without ever being inspected when problems were identified...when welding inspectors were notified, the inspector would just sign-off the weldments without leaving the office..."

The inspector reviewed AWS D1.1, 1975 Edition and noted that the Code does not specifically address notification of QC prior to start of a welding process. However, paragraph 6.5.4 of the Code states; "The inspector shall, at suitable intervals, observe the technique and performance of each welder, welding operator and tacker to make certain that the applicable requirements of Section 4 are met." The inspector reviewed DIC QCP-113 and noted that the requirement for QC notification when structural steel is welded is not included in the procedure. However, DIC QCP-507, paragraph 3.7, states; "The senior mechanical/welding quality supervisor shall be notified prior to the commencement of welding of material within the scope of the procedure."

A sampling of the inprocess control surveillance reports were reviewed by the inspector covering the period from 1977 through 1983 and revealed no areas of concern.

In addition, the inspector reviewed weld data packages (travelers) that had been signed off by quality inspectors for inspection of fit-up of components prior to welding. Additionally, the packages included weld inspection records signed by both an inspector and a reviewer. During the past three years, the inspector personally observed fit-up inspections, in-process inspections, and final weld inspections of supports and restraints.

Interviews with personnel still onsite, QC inspectors, civil engineers and one worker indicated that they knew of no instance where concrete was placed before welds were inspected.

- (11) "Deficiency reports are virtually extinct out there. They just always rework and don't write deficiency reports. I don't know if I should say they rework but...is common practice not to write deficiency reports, just try to get it to meet inspection requirements and not reject it at first." "They just don't want to write DRs. It makes it look bad and they think...it looks bad for their department...Plus it's too much work and they'd rather not do it. If they find something they will just have the crafts keep doing it until they think it's good enough to sign-off..."

The inspector reviewed computer data listing the Deficiency Reports originated since 1975. The data lists show the following:

<u>Year</u>	<u>Deficiency Reports</u>
1975	3
1976	75
1977	368
1978	552
1979	1,192
1980	1,993
1981	2,930
1982	4,755
1983	3,788
1984 (to June)	1,594

The listing shows that DR initiation rate follows the stages of construction and increased activity through preoperational testing turnover (where each system was walked down by QC) then the large numbers during area turnovers.

The above data shows that Deficiency Reports were and are being initiated during plant construction. This allegation is not substantiated and is considered to be closed.

- (12) "Problem in the waste water where they had this surge in water. Every time it rains they have this massive water flow through the well. I don't know if you call it effluent or sewage system...they've never been able to identify where it comes from...they've been looking at it for years."

The waste water system and sewage plant are not safety related systems at Callaway. The inspector determined through interviews with personnel cognizant of this alleged problem that the contractor had identified unusual flows of clean water through this system. Investigation of these surges revealed that they were caused by demineralized water released during flushing and hydro-

static testing of plant systems. No surges of water through the system have been observed since completion of plant flushing and hydrostatic testing operations. No correlation has been established linking weather conditions to the flow surges.

Since licensee personnel have investigated this concern and apparently identified the source of the water and since this system performs no nuclear safety related function, the inspector has no further questions regarding this allegation. This allegation is considered to be closed.

- (13) During the Fall of 1983, a laborer (NFI) told the allegor that reactor dome liner sheet welds were corroded from acid in the air. The welds were described as having no weld metal left and "places you could stick a pencil in."

At the inspector's request, a 100% reinspection of seam welds in the reactor building dome liner plate by certified Daniel International Quality Inspectors was performed on July 6, 1984. The inspector's observation of the reinspection and review of the results of the inspection indicated that the welds had not corroded as stated in the allegation. During interviews with the NRC inspector, the Daniel Quality Inspectors stated they had not identified any welds that were not acceptable according to the original inspection criteria.

Based on the results of the reinspection and interviews with the individuals performing the inspection, this allegation is not substantiated and is considered to be closed.

- (14) At about the time the fuel pool was to be tested, a hole was found in the liner. The allegor described the hole as "six inches wide, welded through the liner of fuel pool. But I'm sure they fixed that because they had to test it to hold water..." The allegor thought this hole may have been sabotaged as "they just had it finished, just had it cleaned...I didn't really hear this sabotage. We kind a assumed it was...that somebody...the official word going through the bosses was that a welder fell against it..."

The only hole in the spent fuel pool liner was identified on nonsafety related NCR No. 2NN-2198-CW on August 21, 1981, when during welding activities in the spent fuel pool a welding lead short circuited to the liner plate and burned a hole in the plate. The hole was repaired. The repair documentation including NDE reports PT-03965 and PT-03970 indicate that the repair was performed according to approved welding and NDE procedures.

The spent fuel pool liner leak test, conducted in May 1982, did not discover leaks in the spent fuel pool liner.

This allegation was not substantiated as to the alleged's inference that the hole was a result of sabotage. This allegation is considered to be closed.

- (15) "Drains were stopped up because of the weight on top of the drains. Also drains were broken because of the heavy equipment run over the top of the drains."

The inspector examined documentation showing that the safety related drains have been flushed and hydrostatically tested. Additionally, non-safety related drains have been flushed. The inspector performed a walk-through inspection of the auxiliary building, reactor building, and control building to determine if drain covers were in place and plugs removed. No drains without covers or with broken covers were observed. Screens or plugs that had been installed to prevent construction debris from entering the drains had been removed.

This allegation is not substantiated and is considered to be closed.

- (16) The alleged stated that he worked on the crew that put in base rock beneath the Callaway Fuel Building, and he observed an excessive amount of moisture in the base rock. The alleged stated that quality control inspectors checked the moisture of the rock and found the rock was too wet. The alleged observed that the rock was still wet after the fill was complete. According to the alleged the rock was wet even during dry periods in the summer and this led him to believe that a spring existed beneath the base rock.

The inspector examined photographs of the site showing views of the excavation in the area where the fuel building was erected. The photographs were taken at various times of the year prior to and during backfilling. No evidence of springs discharging water into the excavation was visible.

The inspector interviewed persons who were present before backfill was placed for the fuel building. None of the persons who were interviewed had seen evidence of water entering the excavation from springs.

Neither the Dames and Moore hydrological survey of the site, nor their test borings identified springs.

Water was used to aid compaction of granular structural fill in accordance with Daniel Procedures WP-102, QCP-102 and Sverdrup and Parcel Specification 4645-4A(Q) which would account for moisture (wetness) in the fill even in dry periods of the summer.

The inspector considers this item to be unsubstantiated and closed.

- (17) "They have had a lot of problem with the water in lower levels of the building, and they constantly have to pump them out. And in big rains I've seen down in lower levels they had a whole bunch of cables going outside and water just pouring in there..."

The allegor is correct in that water did enter the building through the wall penetrations at elevation 2000 and below for construction cables during heavy rains. These openings were closed when the cables were removed as no longer needed, over a year before NRC's receipt of the allegation, and the penetrations sealed. The inspector verified that the cables have been removed and the penetrations sealed and that water does not enter the building on the lower levels identified by the allegor. There is no evidence that water entering through these penetrations damaged safety related plant equipment.

The inspector considers this item to be closed.

- (18) During the Spring 1983, the allegor observed that a concrete pour had begun on "a wall on a cooling tower building" (possibly a pump house) without having mud cleared from the forms. The allegor noted that approximately 4" to 12" of mud stood in the forms before it was cleared out but that after cleaning, one to four inches of mud were left in the forms.

There are no safety related structures in this area, so a wall on a cooling tower building would not be a safety related wall. The inspector reviewed NRC civil inspection reports covering 1976 through 1983 which did not identify any concerns regarding mud in forms prior to concrete placements for safety-related structures. This item is considered to be closed.

- (19) The allegor also described a situation during a concrete pour for the site cooling tower's ring footers. The allegor observed "mud boiling over the reinforcing rod." The allegor continued to pour concrete at his foreman's direction, as the allegor thought he would be disciplined for insubordination if he stopped pouring concrete.

The NRC was advised of this allegation on May 1, 1979, by an ironworker who worked for the contractor.

The cooling tower is not a safety related structure. It is located approximately 1200 feet from the nearest safety related structure. The NRC does not assume jurisdiction over structures or components whose failure would not affect nuclear safety.

This item was referred to OSHA on May 4, 1979.

This item is considered to be closed.

- (20) The allegor noted that the bottom level of the Callaway auxiliary building leaked. The individual thought the source of the water may be the spring beneath the fuel building base rock. The leaks were stopped by using "waterplug". The allegor observed that the Callaway reactor, fuel and auxiliary buildings were separated by "Rotofoam" and at the 1974' elevation the auxiliary and reactor buildings were also separated by cork. He stated that the cork in a "hot room" on the 1974' elevation of auxiliary building was exposed and had been damaged by the water seepage. The allegor was concerned that the water seeping into the cork in the "hot room" could become contaminated with radiation and then seep into the environment. The individual thought this concern could be corrected by installing a curb or wall in the "hot room" to deflect the water into the sewer. The individual made a sketch of this concern during the interview. The individual asked Region III to look into the material characteristics of the plugging material.

The area discussed by the allegor is on the 1974' elevation at the seismic isolation vertical joint between the reactor building, auxiliary building and the fuel building. The seepage of ground water through the joint was identified on NCR No. 2SN-9608-C in February 1984. The NRC inspector's observations indicated the amount of seepage varies with weather conditions. Seepage increases after heavy rains and decreases to a level such that it is not visible during dry weather. This variation indicates that the seepage is not caused by underground springs beneath the backfill.

Disposition of NCR 2SN-9608-C required removal of the existing styrofoam material and replacement with a silicone based material. The silicone based material was approved by the architect/engineer. The styrofoam has been removed but the new material has not been installed. The architect/engineer performed an analysis of the result of a radioactive water leak in the area. It was determined that water would flow into the drain system since there are four drains in close proximity to the waterstop. However, in the event some of the water reached the waterstop and leaked to the surrounding ground, the radiological consequences would be minimal and are enveloped by the accident analyses presented in Section 2.4.13 of the Callaway FSAR Site Addenda.

This item remains open pending review by Region III radiation protection inspectors (50-483/84-30-01).

- (21) Until three years ago cheating was done on inspector certification exams. Answers were given, test takers were coached, and copies of exams were available before the exam was administered.

Possible compromise of DIC Quality Inspection Certification program was reported to NRC as a potential construction deficiency pursuant to 10 CFR 50.55(e) on March 29, 1983. The investigation by the licensee and DIC determined that a 10 CFR 50.55(e) condition did not exist and the report was withdrawn. The item was closed in NRC Region III Inspection Report No. 50-483/83-13.

The inspector reviewed the notifications of possible test compromise to the Atomic Safety and Licensing Appeal Board dated April 8, 1983, and April 28, 1983, that described the incident and the licensee's corrective action.

The inspector reviewed signed statements from quality inspectors in which the inspectors stated that they had not received test answers, questions or materials that identified test information prior to being tested.

Licensee and contractor investigators interviewed 145 inspectors randomly selected from all disciplines. Results of these interviews indicated that the testing program had not been compromised. The practice of having both written and practical examinations made cheating difficult. The failure rate for examinations of eleven percent is not indicative of widespread cheating on the examinations.

Additionally, discussion of QC inspector training is provided in paragraph 4.a.(7) above.

This allegation was not substantiated and is considered to be closed.

- (22) Daniels International conducted an investigation into the test cheating and three people who truthfully answered the questions were fired.

The inspector determined that six persons had been terminated during the period March through June 1983. Of these six, only one individual had been interviewed during the investigation. This individual had stated that he did not know of any instances of test cheating. The individual was terminated for disorderly conduct. He is presently employed by Daniel International at another construction site.

This allegation is not substantiated and is considered to be closed.

- (23) The alleged stated that he twice assisted in inspections of structural steel bolt torque and found the bolts were overtorqued. Reinspections of the plates found that not only was the torque improper, but also that the wrong nuts and bolts had been used. The reinspections also found the wrong projection existed.

By design structural steel bolted joints were not tightened with a torque wrench, rather load indicating washers were used for assuring sufficient bolt tightness. In addition to verifying bolt tightness at initial installation, the licensee conducted a 100% reinspection of structural steel bolting during 1983. One of the attributes reinspected was sufficient bolt tightness.

The inspector reviewed documentation of anchor bolting for surface mounted plates and inspection of concrete expansion anchors (CEA) installed in safety related systems. This documentation indicated that nonconforming bolts and nuts had been replaced where identified. The inspector's walkdown of safety related areas did not identify nonconforming nuts and bolts. Additional discussion of the inspector's review of surface mounted plates is provided in paragraph 4.a.(6) above.

This item is considered to be closed.

- (24) Structural steel was installed, bolted and inspected; however, the crafts later removed the steel and bolts to move in equipment. The steel and bolts were reinstalled, but were not reinspected. These bolts and steel which were not reinspected were covered over with concrete or spray coating. This occurred in at least the diesel generator building.

The installation and subsequent removal and reinstallation of structural steel was addressed in NRC Inspection Report No. 50-483/77-10.

Structural steel bolting was reinspected during 1983. The reinspection encompassed all accessible high strength structural steel bolting in the diesel building, control building, auxiliary building, reactor building and fuel building. Fireproofing was removed to make bolts accessible for reinspection and then replaced.

The inspector reviewed records of special training on proper inspection and installation techniques relative to load indicating washers presented to quality inspectors and ironworkers.

The reinspection of high strength bolted structural steel connections in safety related structures covered 21,362 bolts. The connections were inspected for proper fastener grade, proper fastener assembly including correct orientation of load indicating washer and proper bolt tension as indicated by the load indicating washer gap readings. Portions of the reinspection and corrective actions were witnessed by the NRC resident inspector in the diesel building, auxiliary building, and reactor building.

The inspector reviewed the sequence of installation for equipment. Major components were installed before steel that would have to be removed was installed. Bolts for structural steel that would have been removed are accessible and were included in the reinspection of 1983. The inspector determined by visual inspection that equipment may be installed or removed in the diesel room without removing installed structural steel.

Based on review of reinspection documentation, and direct observation by the resident inspector, this allegation was not substantiated and is considered to be closed.

- b. Allegation regarding post applied heat numbers (ATS No. RIII-84-A-0060). It was alleged that pipefitters had installed hangers using materials which did not have identifying heat numbers applied prior to installation at the Wolf Creek and Callaway Plants and that the craft would go to an identical hanger erected previously, copy the heat number and stamp the number on a hanger without a heat number. The incorrect number would then be written on the documentation for that hanger. Field fabricated hangers were the principal hangers without heat numbers and traceability. The alleged indicated that hangers coming from the fabrication shop had heat numbers stamped on their components in the shop and that field fabricated hangers were usually stamped, (sometimes vibroetched) by the craft in the field. The alleged stated that his foreman told him that should he ever be caught stamping the numbers on hangers without heat numbers he was to say he was only making the numbers deeper. He did not recall the name of his foreman who directed him to apply the heat numbers. He stated that only the craft knew of the post application of heat numbers. He indicated that the post applied heat numbers were on pipe supports in the reactor building between elevations 2000' and 2015'.

The seven pipefitters and two hanger quality inspectors remaining onsite stated that they were not aware that heat numbers were being applied after the hanger had been installed. They indicated that when heat numbers were applied in the field, that the heat number on the documentation accompanying the hanger material was applied to the hanger.

The inspector examined safety related pipe supports in the reactor building below the 2015' level and did not observe vibroetched heat numbers on safety related hangers. The inspector did not examine nonsafety related hangers.

The inspector reviewed procurement specifications for steel shapes used at Callaway. Specification No. 10466-M-218 and 218A requires that material supplied to the site for pipe supports will be safety grade material fabricated in accordance with a quality assurance program per Subsection NF of ASME Section III. Specification 10466-C-1310 requires that structural steel supplied will be safety grade material in accordance with an approved quality assurance program.

This item is considered to be closed for the following reasons:
(1) All hanger material was procured as safety related material.
(2) It was welded by qualified welders and it was inspected by certified quality inspectors. (3) The NRC inspector identified no problems during his review of this allegation. (4) The alleged was unable to provide detailed information identifying the pipe supports or systems with the allegedly falsified heat numbers.

c. MATSCO Quality Assurance Deficiencies (ATS No. RIV-83-A-0072).

The resident inspector received a telephone call from an individual with concerns about MATSCO, a Dallas, Texas firm who supplies testing and metrology services for the nuclear industry.

The caller stated that MATSCO Quality Assurance had inadequate organizational freedom and independence. That they were not permitted to hire their own personnel. He also stated that MATSCO auditors in the field reported to the operations manager and not the QA manager and that personnel were sent to sites without adequate screening. He stated that MATSCO personnel were involved in preoperational testing at Callaway, Wolf Creek, Fermi, Clinton, Grand Gulf and Waterford sites. In addition, they provided metrology services at Comanche Peak and Northeast Utilities.

The caller stated that he had called the licensee Quality Assurance Manager prior to calling the NRC. The caller was advised to call the NRC Region IV office regarding the 10 CFR 21 notification since he was located in Dallas, Texas area as was the Region IV Office and that the Callaway inspector would forward his allegations to Region III. The inspector verified that the same allegations had been made to the licensee.

The inspector reviewed the report of a special QA audit of MATSCO performed by the licensee in response to the above allegations. MATSCO was only one of several companies providing personnel for Callaway's preoperational test program. Preoperational testing at Callaway was performed under the SNUPPS QA program for Design and Construction. NRC Region IV Vendor Branch Inspection No. 99900539/83-01 was performed at MATSCO as a result of these allegations. No violations were identified during the inspection relative to the qualification of test engineers or technicians furnished to Callaway, QA independence, or auditor reporting.

Preoperational testing personnel at Callaway were certified under the Callaway QA program. In addition, the inspector reviewed licensee audit reports which demonstrated that personnel qualifications have been routinely audited during preoperational testing. This allegation is closed.

5. Battery Cell Spacers

The inspector reviewed NRC Vendor Programs Branch Report No. 99900841/84-01 for GNB Batteries, Incorporated which discusses the failure of open cell battery spacer material in that the material became permanently deformed when compressed during seismic testing. The original open cell urethane material was replaced by closed cell polyethylene material and the seismic qualification test was repeated with no failures.

GNB developed an approved procedure for the replacement of open cell spacers with closed cell spacers and notified SNUPPS.

The inspector examined the Bechtel Field rework plan RE-050-A for Callaway showing completion of the spacer replacement and Certificates of Conformance showing the material and workmanship to be according to specifications. The rework plan was signed as completed by the vendor and verified to be complete by the responsible licensee test engineer.

6. Exit Interview

The inspector met with licensee representatives at intervals during the report period. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the findings as reported herein.