



UNION ELECTRIC COMPANY

1901 Gratiot Street, St. Louis

December 7, 1984

Donald F. Schnell
Vice President

Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Dear Mr. Keppler:

ULNRC-988

UE RESPONSE TO GAP ALLEGATIONS

Your letter dated October 3, 1984, transmitted a list of forty-seven allegations regarding Callaway Plant which the Government Accountability Project (GAP) made to the NRC Commissioners. Our responses to these allegations are contained in the enclosure.

As a result of discussions with the NRC Resident Inspector, Mr. John H. Neisler, it is our understanding that your staff will respond to Allegation 48.

If you have any questions, please contact us.

Very truly yours,

Donald F. Schnell

DFS/RLP/JRV/kc

Attachment

cc: W. L. Forney, NRC Region III w/a
NRC Resident Inspectors, Callaway Plant (2) w/a
Missouri Public Service Commission w/a

8502280160 850205
PDR ADOCK 05000483
G PDR

DEC 12 1984

Allegation 1

Painters at Callaway have prepared thousands of welds in the Reactor Building for painting by removing the rust-proofing from the welds. The rust-proofing was removed with grinders from these welds that had already been Quality Control inspected and approved. No measurements were made of the remaining weld metal or base metal. Since no re-inspection has been done, the quality and safety of thousands of welds in the Reactor Building is now indeterminate.

Response

Temporary rust inhibitive coatings were not used on welds which ultimately were to be field coated. Project specifications delineate power tool cleaning devices to be used to remove rust or other foreign material in order to properly prepare surfaces for painting. These approved cleaning methods were used to cosmetically prepare the weldment as required for safety-related coatings, and did not appreciably reduce the base material thickness or the size of the weldment. These approved cleaning methods did not include the use of conventional grinding wheels.

In addition, some piping welds were cosmetically buffed to facilitate pre-service and inservice inspections in order to meet design requirements. These weldments were then inspected by the required nondestructive examination methods.

This allegation could not be substantiated.

Allegation 2

Welders have ground smooth the horizontal, the vertical, and the floor panel welds of the Spent Fuel Pool, Transfer Canal and Cask Loading Pool. In the process, negligent welders removed weld metal and base metal. As a result of this overgrinding, certain areas of these pools no longer meet thickness requirements. The integrity of the Spent Fuel Pool, Transfer Canal and Cask Loading Pool is questionable.

Response

On October 1, 1984, UEQA and the NRC Resident Inspector examined welds in the Fuel Pool areas. The results of the examination revealed the presence of weld crowns for horizontal, vertical, and floor panel weldments, giving evidence that weldments have not been ground flush or below the base material as alleged. In addition, the Architect/Engineer (A/E) drawing requires that "all exposed field welds shall be ground to a smooth contour", and not flush.

It was very apparent due to the high luster of the weldment (inclusive of the base material) that only cosmetic preparation of a weldment was accomplished with the aid of approved sanding flapper wheels (e.g., 220 gr. sandpaper) or polishing stones and not with a large hard surface grinding disk. Grinders are only utilized to remove large quantities of material. In addition, if grinding disks had been utilized, a bold distinctive circular pattern would be prevalent throughout the area(s) of concern. There was no evidence of this distinctive pattern.

In discussion with cognizant individuals (Area Superintendent, General Foreman, welders, ironworkers and boilermakers) who were directly involved with the buffing of the weldments in the fuel pool area(s), it was disclosed that only qualified craftsmen were allowed to perform work on the fuel pool(s) liner welds. It was also noted that only cosmetic surface preparation took place thereby precluding the potential damage to the liner plates. This type of cosmetic preparation was performed in order to alleviate the potential entrapment of crud in and around the weld ripple(s) and to facilitate a more meaningful nondestructive examination.

The issues contained in this allegation could not be substantiated.

Allegation 3

Furthermore, hasty and improper rework was done on the seam welds of the liner plates in the Spent Fuel Pool, Transfer Canal, and Cask Loading Pool. These liner plates are defective in that they are not exactly square. This defect made original welding difficult. The seam welds of the liner plates were reworked but because of time constraints, the welds were not sufficiently repaired.

Response

The erection of the liner plates in the fuel pool areas was to specified tolerances designated by the A/E to meet the design specification. Installation and welding of these liner plates were accomplished in accordance with approved project procedures. Deviations concerning out-of-square conditions were documented in accordance with project procedures and were evaluated and determined by the A/E to meet the intended design and end use.

The above allegation references issues that were previously identified, evaluated and resolved in accordance with project procedures.

Allegation 4

Weld metal joining the reinforcing ribs and the steel liner plates of the Containment Building has been eaten away by rust and corrosion. These welds located on the backside of the steel liner plates were not rust-proofed. Corrosion covered the backside of these plates before they were encased in concrete.

Response

The reinforcing ribs are used to stabilize and stiffen the liner plate prior to and during concrete pours.

The only rust that existed at the time of the concrete pours was cosmetic rust bloom (minor surface oxidation), which in fact serves to actually increase the concrete to steel bond, as referenced by the American Concrete Institute (ACI) "Manual of Concrete Practice," 1974 Edition, Part 2, Section 318-101, Paragraph 7.2 "Surface Conditions of Reinforcement". In addition, Section 318-17, Chapter 7, Paragraph 7.2 "Surface Conditions of Reinforcement" states, "Metal reinforcement at the time concrete is placed shall be free from mud, oil, or other non-metallic coatings that adversely affect bonding capacity" (e.g., rustproofing).

It should also be noted that once the concrete pour was completed there was little or no air which would propagate further oxidation of the weldment.

The issues contained in this allegation could not be substantiated.

Allegation 5

Bad welds exist on pipehangers as well as on the embed plates that anchor the pipehangers. These pipehangers and embeds are located near the floor of the Reactor Building. They are difficult to reach due to the surrounding installed equipment. The bad welds have excessive weld material, tiny holes, and pockets on the surface; some of the welds are actually incomplete. No rework has been done on these faulty welds.

Response

On October 11, 1984, UEQA and Daniel QC accompanied by the NRC Resident Inspector, examined pipe hangers welded to embedment plates on elevation 2,000 of the Reactor Building. This examination concluded that the welds were accessible for installation and inspection. A visual examination of these welds revealed no unacceptable conditions. The welds exhibited the required code attributes.

The issues contained in this allegation could not be substantiated.

Allegation 6

Not all welds that have been Quality Control approved have been Quality Control inspected. Welds in difficult to reach areas, such as on unistruts, have been approved without the Quality Control inspector's examination. There are also welds that have been approved without inspection located on the condensers in the Turbine Building.

Response

Welds on safety-related supports using unistrut material are inspected to specification, procedure and applicable code requirements. These inspections are documented and the documentation is reviewed by other qualified Quality Control personnel to verify that all required weldments are inspected and properly documented (e.g., inspection records are compared with the applicable drawing). It should be noted that Quality Control review personnel are trained and certified in the same manner as inspection personnel.

The inspections and documentation activities are subject to overview by Quality Control supervision and Quality Assurance.

The condenser, located in the Turbine Building, is a pre-fabricated, nonsafety-related component which required only limited engineering inspections. This condenser was purchased and installed per the A/E's requirements.

The above allegation could not be substantiated.

Allegation 7

Inexperienced and underqualified welders were employed at Callaway. Union pipefitters and welders were not hired by Daniels International because there was a shortage of skilled welders. As a result, a welder training program was established. The program was very brief, and it was commonly referred to as a program which produced "instant welders". Journeymen welders generally spend several years developing the expertise required for welding. This program produced welders in a matter of weeks.

Allegation 8

Furthermore, the welder certification testing program allowed almost everyone who took the examination to pass. Thus the program permitted inadequate welders to weld safety-related structures.

Allegation 9

The welder certification testing program did not screen out these bad welders. It was apparent that it was set up for the purpose of producing men to do the work rather than to risk slowing up production by withholding certification from bad welders. In fact, it was reported as common knowledge that the welding certification supervisor for several years would look the other way, and certify technically inadequate welders. He did this in exchange for the payment of bribe money. Workers who were unable to weld adequately graduated from this program.

Allegation 10

Yet another technique used to pass welder-applicants was accomplished by allowing applicants to take the test as many times as was necessary. If an applicant failed, the test was not considered as a "test" but rather merely as practice. Welder-applicants took the test as many as five times before an acceptable weld was produced.

Response

Because of the similarities of Allegations 7, 8, 9, and 10 they have been addressed in the following single response:

Approved site procedures set forth the methods and requirements for the welders' qualification testing program. These procedures delineate Quality Control's responsibilities for monitoring, evaluating, and inspecting welder qualifications and performance.

All welders are required to qualify to these requirements and procedures regardless of previous welding background. Training of inexperienced welders was accomplished at a designated off-site training center, under supervision of a qualified instructor. Instruction consisted of welding to meet nuclear code quality requirements. In some cases welding trainees were terminated from the program because they could not acquire the necessary skills (e.g., eye and hand coordination). Experienced welders went directly to the on-site testing booths.

All welders' qualification tests were performed on site in testing booths under the guidance of the Welding Superintendent, who may, based on the welder's performance, stop the welding at any point it is evident that the weldment will not pass a quality control or nondestructive examination. Such a termination is documented as a failed welding test. However, Quality Control personnel, not the Welding Superintendent, were responsible for the final evaluation and acceptance of all tests, based upon the applicable code. A welder who failed a welding test was required to satisfy strict programmatic requirements prior to retest. It should be noted that code requirements do not impose a time restriction or a number of times an individual may retest.

A similar allegation concerning welder qualification was investigated and was resolved in NRC Inspection Report 50-483/78-04. Numerous NRC inspections, as well as construction and owner surveillances and audits have verified the Callaway Welding Program to meet or exceed ASME and AWS code requirements.

In addition, welder performance is monitored on an ongoing basis after certification of the welder by supervisory overview, audits, surveillances, and trending the results of Daniel QC inspections and nondestructive examinations.

As a result of interviews with welding and supervisory personnel, no evidence could be found that welders were certified in exchange for the payment of bribe money.

The issues contained in these allegations could not be substantiated.

Allegation 11

As a result of using this underqualified and inexperienced work force, much rework had to be done. The pipe hanger department suffered the most because the worst welders were often relegated to pipehanger welding. Many of these welders were hired during the construction of the Control Building. Pipehangers and supports were slapped in by these inexperienced welders to keep the construction of the building on schedule. A lot of shoddy work was done, and duplicate work was required by the hanger department in later years.

Response

Temporary hangers which were uniquely marked were installed as required in the Control Building to facilitate the installation of piping. These hangers were replaced with permanent hangers prior to system turnover.

Necessary design changes did require upgrading of some permanent hangers in the Control Building.

With respect to qualification and continued quality of welder performance, refer to the Response to Allegations 7, 8, 9, and 10.

The issues contained in the above allegation could not be substantiated.

Allegation 12

This mode of construction creates many problems. Once construction was complete, repair and rework was done on the lower levels of the Control Building two to three years later. Some of the welds could not be reached; some were covered with concrete. This rework weakens the metal because of the required reheating. The tensile strength is reduced and the metal becomes brittle. In addition, the cost of each weld that has to be reworked is doubled.

Response

Rework consisted of removal of temporary hangers or upgrading of permanent hangers to meet design change requirements. Welding, and pre-weld and post-weld heat treatment were accomplished in accordance with site procedures which meet or exceed ASME and AWS requirements.

These requirements adequately controlled the potential reduction in strength and embrittlement of the metal.

On October 18, 1984, UEQA, accompanied by the NRC Resident Inspector, examined welds in the lower level of the Control Building. These welds were observed to be unobstructed by concrete and readily accessible. The examination revealed no inaccessible weldments.

The above allegation could not be substantiated.

Allegation 13

Quality Control inspectors did not always maintain the necessary independence from the pressures of schedule and cost. It was reported that Quality Control inspectors would sometimes approve without inspection welds located in hard to reach areas. These areas are exactly the places where it is more difficult to do welding, and therefore, more important to inspect for poor welds.

Response

Weldments are inspected to specifications, procedures, and code requirements. These inspections are documented, and the documentation is reviewed by other Quality Control personnel to verify that all required weldments are inspected and properly documented (e.g., inspection records are compared to the applicable drawing).

These inspections and documentation activities are in turn subject to overview by Quality Control supervision and Quality Assurance.

The above allegation could not be substantiated.

Allegation 14

Quality Control inspectors were known to favor their friends. They would inspect to a lesser standard than they were required.

Response

During interviews on October 17 and 18, 1984, by UEQA with nine welders, all of the welders interviewed felt that QC inspectors were consistent in applying inspection standards.

Union Electric Quality Assurance and Daniel Quality Assurance audits and surveillances performed during construction have shown that the Quality Control inspectors performed their inspections to project requirements without any cases of favoritism indicated. See the response to Allegation 13 also.

The above allegation could not be substantiated.

Allegation 15

Those Quality Control personnel who attempted to be assertive in their positions have been subjected to intimidation and harassment. It is reported that workers have dropped things from heights such that the hardware dropped would land near the Quality Control inspectors. Quality Control inspectors have been splashed with concrete and with water, and one Quality Control inspector had his hand intentionally smashed with a vibrator by a workman.

Response

This area was reviewed in depth by the NRC from April 26, to May 7, 1982, as a part of their "Construction Assessment Team" inspection. While it was noted that three instances of altercations between Quality Control inspectors and craft personnel had taken place, the NRC Assessment Report 50-483/82-03 concluded that "the inspectors are free from harassment, intimidation or other undue pressures except for infrequent, isolated cases which have been promptly and rigorously corrected".

In addition, discussions were conducted with four welders on October 1, 1984. The results of the discussions indicated that willfully harming a fellow worker is considered unprofessional in the trade, against site policy, and would result in immediate termination.

An extensive search of the records in Safety First Aid, Personnel and Labor Relations, in addition to discussions with Quality Control (Civil) inspectors did not reveal any evidence of the "smashed hand" incident having taken place at the Callaway Site.

It is Union Electric's position that such incidents are isolated and have been met with prompt management action.

Allegation 16

Quality Control-issued "hold tags" often left workers idle for one or two days. "Hold tags" indicate that there is a problem with the tagged item and all work on this item should be stopped until the problem is resolved. Once the problem is resolved, a Quality Control inspector removes the tag and work can continue on the item. Often, a foreman or supervisor would eventually give the order to proceed with work and ignore the hold tags. Workers questioned the unexplained orders to proceed when the work had not been changed or been seen fixed. Either money was being wasted on non-problems or safety deficiencies were being accepted.

Response

Site procedures implement measures to control material, parts or components which do not conform to requirements (e.g., design specifications) in order to prevent their inadvertent use or installation.

Administrative controls were established to allow work to proceed based upon an evaluation of the nonconformance by engineering and UEQA personnel and issuance of a formal Conditional Release. The foremen were then notified to commence work.

The issues raised by the above allegation could not be substantiated.

Allegation 17

There was a shortage of Quality Control inspectors. One worker reports waiting six, ten hour days for a Quality Control inspector. During this delay, the worker was not permitted to move onto a new work assignment.

Response

It was the responsibility of each craft to notify QC when their work was ready for inspection.

Project management was cognizant of the need for prompt inspection of work to support the project schedule. Actions were taken, including increasing the number of QC inspectors and reorganizing the Project Quality Group to dedicate more time to field inspections.

Normal project management controls were utilized to detect and correct situations as described, which effectively negates this allegation.

Allegation 18

Deficient electrical cable has been used on safety-related systems throughout the plant. Generic problems regarding the environmental qualification testing of this Class 1E electrical cable have been recognized and acknowledged by the NRC, Office of the Inspection and Enforcement. It is reported that this cable is literally all over the plant.

Response

The environmental qualification testing previously completed on cables manufactured by the Rockbestos Company was addressed by the NRC in I/E Information Notice No. 84-44 dated June 8, 1984.

The NRC in their Safety Evaluation Report has concluded that reasonable assurance has been provided that Callaway Plant can be safely operated pending completion of the Rockbestos environmental qualifications. To resolve the NRC's concerns, the manufacturer is presently conducting additional environmental qualification testing.

The A/E has concluded that requalification testing performed to date has given a high level of confidence that previous qualification testing was valid and that Rockbestos cable installed at Callaway Plant is acceptable.

The location of all the Rockbestos cable installed at Callaway Plant is known.

This allegation addresses issues which were previously identified, evaluated and are currently being resolved.

Allegation 19

Electrical cables were installed too early in construction operations. The cables have been exposed to the harsh environment of early construction and have been damaged during construction from hot metal and other elements thrown around during early construction.

Response

The schedule for installation of electrical cable was implemented to meet the overall construction schedule and availability of work areas and craftsmen. The possibility of cables being damaged from construction activities was recognized at the onset of cable pulling and resulted in numerous inspections, audits and surveillances. Additionally, detailed work instructions were issued and "gang box" craft meetings were held to increase the awareness of all craft in regard to the protection of electrical cables. System qualification tests were performed to assure integrity of electrical cables. Cable protection was also addressed by numerous inspections by the resident NRC Inspectors and NRC Region III Inspectors.

A similar allegation was investigated by the NRC and closed in NRC Inspection Report 50-483/84-30.

The issue addressed by this allegation was previously recognized and controlled.

Allegation 20

Violations of electrical wire bend radius are reported. Eighty to eight-five percent of junction boxes are too small through the Auxiliary Building and the Control Building. Because these junction boxes are undersized, wires which feed in and out of the boxes are overstressed.

Response

The problem with undersized electrical pull boxes causing potential violations of the minimum bend radius was identified by UEQA in March, 1983. This problem affected 23 out of approximately 690 electrical pull boxes. A potential 10 CFR 50.55(e) deficiency concerning these field designed electrical pull boxes was reported to the NRC. The final report which resolved the issue was reviewed and satisfactorily closed by NRC Inspection Report 50-483/83-33.

The issues contained in this allegation were previously identified, evaluated, resolved and controlled.

Allegation 21

There are no protective cable jackets and static bleeder wires on cables feeding through the cabinets into the Control Room. Protective cable jackets and half-wrapped, outside electrical interference deflector wire were removed in order to fit the cables through the undersized cabinets.

Response

The type of prefabricated cable addressed in the allegation was installed by qualified craftsmen to the A/E's approved specifications. In addition, these cable installations were inspected by qualified Quality Control personnel.

Prior approval from the A/E was obtained to modify these prefabricated cables by removing the jacket and drain wire (bleeder wire) to facilitate their installation into some cabinets. By the termination schedule, one end of a drain wire is to be grounded, and the other is to be either removed or secured from ground. This is the preferred engineering practice. The removal of the jackets had no effect on the operation of the cables and the removal of the drain wires had the desired effect, as was verified during preoperational testing.

This allegation addresses issues which were previously identified, evaluated and resolved.

Allegation 22

High voltage splicers frequently are submerged under water in eight foot deep concrete man holes. These man holes, built for high voltage splicers, have no drainage system. Water collects in the man holes submerging the electrical cables until the water eventually evaporates.

Response

Safety-related cables in the safety-related ductbanks were pulled end to end without splices. Water in the manholes was addressed in an earlier UEQA surveillance in which the A/E responded stating in part that "No damage will result to the cable by being submerged in water".

Splices occur only in nonsafety-related ductbanks providing power to the outside buildings. These splices were installed in accordance with the A/E approved design and have been hi-pot tested to assure their integrity.

The above allegation could not be substantiated.

Allegation 23

Insufficient fire proofing has been installed on these high voltage splicers. These splicers have only one-third the required fire-proofing.

Response

As noted in the Response to Allegation 22, safety-related cables are pulled end to end without splices. In cases where fire protection is required, cable trays are enclosed in 1/16" thick steel as detailed by the A/E drawings.

The above allegation could not be substantiated.

Allegation 24

The use of vibrators was an ineffective means of spreading concrete. Vibrators did not settle all of the concrete. Throughout the pours, the density of the concrete and the high volume of reinforcing steel created problems with the flow of the concrete. Pockets of air were created around the reinforcement bars. Voids remain in the concrete.

Allegation 25

The only attempt to test the concrete for voids was the visual inspection. Visual inspection, as the only means used to detect voids, reveals only those voids which are apparent on the surface of the concrete. Sound testing is not an effective means of detecting voids because of the high volume of reinforcing steel used. For instance, in the base mat of the Containment Building, there was approximately one pound of reinforcing steel for every nine pounds of concrete.

Allegation 26

Patchwork of the voids was very limited. The rebar prevented cement finishers from reaching some of the more extensive voids. Thus, grouting was done only in those areas that the finishers could reach.

Response

Because of similarities of Allegations 24, 25, and 26 they have been addressed in the following single response:

Project specifications and procedures prohibit the use of vibrators to spread concrete. These procedures further detail the requirements and documentation that are required to be implemented during a concrete pour. These procedures require that concrete be deposited as near as possible to its final resting place, limit the flow of concrete, control the free fall of concrete, and require that concrete is thoroughly consolidated. The activities are independently verified by QC Inspectors.

The design of certain slabs and walls required a large amount of rebar at given locations. These congested areas were recognized by cognizant supervisors who issued instructions to construction personnel so that they may familiarize workers of foreseen difficulties. In certain recognized congested areas the A/E provided different concrete mixes to minimize potential problems and recommended the use of "pencil" vibrators in confined areas. Training sessions were given to vibrator operators on the use of vibrators for concrete consolidation per the ACI Manual of Concrete Practice, a recognized industry standard, and the A/E's specification.

The above requirements help develop complete settlement and consolidation of the concrete and prevent segregation of the mixture.

The industry's practiced inspection method for voids in structural concrete is primarily the visual method as recognized by the American Concrete Institute, ASTM Standards, and the A/E's specifications related to concrete construction. Callaway has followed the industry practice. Voids or air pockets in concrete are the result of inadequate consolidation of concrete which is most likely to occur in the area of reinforcing steel that is in close proximity to a formed surface. Thus the greatest potential for a void to exist is between the outermost layer of reinforcing steel and the formed surface, a phenomenon that can be readily detected visually on the formed surface.

Two of the sub-surface methods used at Callaway Plant for inspection for voids were the Soniscope and the Microseismic evaluations. Both of these methods were investigated as part of the Atomic Safety and Licensing Board (ASLB) hearings and found acceptable. In addition, holes drilled for the installation of grout in anchor bolts were inspected and documented for soundness of sub-surface concrete. In all cases the interior of concrete pour was found to be satisfactory.

All known voids in concrete have been previously identified, evaluated, and dispositioned in accordance with design requirements.

In all cases where patchwork was required, the chipped-out area was fully inspected and documented by Construction Engineering and Quality Control to verify that all unsound concrete had been removed before patching was allowed. In some cases, sub-surface concrete inspection was performed to verify that voids did not continue below the chipped-out areas.

The above allegations could not be substantiated.

Allegation 27

Defective bolts were used to install the embeds on concrete ceilings of the Control Building. These embeds were not installed at the time of the concrete pours of the ceilings as planned. Instead, these plates were placed with expansion bolts. Some of the expansion bolts used were "Redheads". "Redheads" have been found by many construction companies to be defective.

Response

The A/E specification detailed what make and type of concrete expansion anchor bolts were approved for use at Callaway Plant. Self drilling expansion anchors, often called "Redheads", were not approved permanent anchor bolts. The approved expansion anchor bolts used at Callaway were subject to receipt, pre-installation and post-installation inspections by Quality Control to approved project procedures. The approved bolts are readily identified by a coded stamp on the exposed end of the bolt. If this stamp was defaced or missing, Quality Control would either request an ultrasonic test to verify bolt length or have the bolt replaced.

A limited number of small diameter "Redheads" were used for temporary supports (which were later removed), and for supporting portable fire extinguishers which were located by field personnel. This type of installation is nonsafety-related and the type of bolt used is readily identifiable.

The issue addressed by the above allegation could not be substantiated.

Allegation 28

Drainage in the Auxiliary Building is poor. Six to eight inches of water on the lower floor has been reported repeatedly. Possibly there is debris clogging the pipes or the pipes are too small to handle the large volume of water.

Response

During construction temporary covers were placed over the permanent drain covers to prevent construction debris from entering the drainage system. Occasionally during plant system flushing and hydrostatic testing it was necessary to empty the test medium (demineralized water) directly onto the floor. This was done under controlled conditions and for a limited time several inches of water may have remained on the floor because the covered drains would only allow limited flow.

A similar allegation was addressed and closed by NRC Inspection Report 50-483/84-30.

The issues contained in this allegation were previously recognized and controlled.

Allegation 29

Pipehangers soiled with metal filings and dirt during the flood of the Reactor Building on June 2, 1984 have not been cleaned. These hangers were cleaned on their outer, easy to clean side, but were not cleaned inside the band which extends entirely around the pipe. The integrity of the pipe will be jeopardized by these dirty hangers.

Response

The inner sides of the bands on pipe hangers located in the lower elevations of the Reactor Building were examined for any visible contamination on October 11, 1984 by a group comprised of UEQA, Construction QC, and the NRC Resident Inspector. No adverse conditions were noted in the sample reviewed.

There are two types of pipe clamps used to attach pipe to their hangers. The more common one is firmly attached to the pipe and moves with the pipe; therefore, no abrasion could take place. The other type has controlled clearances that allow the pipe to slide through the clamp. However, the movement is small and of infrequent occurrence. The combination of controlled clearances, small movement, and low frequency of movement will not cause any detrimental effects to the pipe if any foreign matter should get inside the pipe clamp.

This allegation could not be substantiated.

Allegation 30

Construction drawings were not being updated and revised as necessary. For instance, laborers cutting a trench to lay a pipe discovered a six-inch diameter pipe. There was no record of the pipe on the construction drawing. The identity of the pipe was unknown to the crew as well as to the supervisor.

Allegation 31

Construction drawings were defective. A concrete column was poured according to the construction drawings. It was later discovered that this column was too high to meet the necessary connecting beam. The concrete column had to be entirely removed. Construction of the column was halted for three months thereafter, while the drawings were being corrected.

Response

Because of the similarities of Allegations 30 and 31, they are addressed in the following single response:

The A/E and Construction drawings were controlled in accordance with approved design control and drawing control programs. These programs were verified by audits and surveillances performed by Union Electric, Daniel, and the NRC.

A similar allegation was addressed and closed by the NRC in Inspection Report 50-483/77-10.

The issues contained in these allegations could not be substantiated.

Allegation 32

Poor construction resulted from engineering errors in 5005 construction drawings. 5005 drawings were used for the installation of cable tray supports in the Control Building and the Auxiliary Building. As a result of the poor engineering, hangers were not centered properly on the embeds. The nonconformance report attributed the poor construction to craft error. In fact, the error was due to the incorrect drawings issued by engineers. Quality Control approved this inaccurate construction and accepted "as is". "As is" approval did not reflect appropriate engineering review.

Response

The FS-E-5005 series drawings were not the construction drawings used for installation of cable tray supports. These drawings were prepared as shop drawings to fabricate portions of hangers in the Primary Contractor's fabrication shop. The FS-E-5005 drawings were detailed to the dimensions on the A/E drawings and did not reflect tolerances that were available for the field installations.

Many of the cable tray supports were not required to be placed in the center of embedded plates. Those that were required to be centered but could not be centered within specified tolerances because of interferences or other problems (i.e., accumulation of tolerances) were submitted to the A/E for evaluation, and disposition. Only the A/E determined whether the installed supports could be used "as is", not Quality Control.

The above allegation could not be substantiated.

Allegation 33

Undocumented rework was performed on the Transfer Tube. Under cover at night two boilermaker welders and two helpers removed a piece of this stainless steel tube in order to do repair work within the tube. This work was done without any paper or documentation and without any Quality Control inspection.

Response

All work performed on the fuel transfer tube was accomplished in accordance with site procedures and specifications.

The transfer tube was inspected to design requirements before being embedded in concrete. In addition, because of accessibility from the inside, it was not necessary to dismantle, cut, or remove any section of the transfer tube in order to facilitate any type of repair work within the tube.

However, a review of project records showed that a small piece of the transfer tube was removed for access to the containment tendon sheathing. The removal and repair was fully documented and approved by the A/E.

The above allegation is without merit.

Allegation 34

The reliability of the on-site laboratory is challenged by inaccurate test results. During the flood of the Reactor Building of June 2, 1984, fiberglass insulating blankets were soaked with borated water. Eighty-five blankets were removed and sent to the on-site laboratory to be tested for damage caused by the caustic acid. The on-site laboratory concluded that the borated water soaked blankets did not need to be replaced. The strength of the blankets had in fact deteriorated such that they could be shredded by hand. The blankets were ultimately found to be defective by the pressure of the workers and were replaced.

Response

Union Electric's Chemistry Department was requested by the Primary Contractor on May 7, 1984 to analyze samples of Nukon blanket insulating material that had been exposed to a borated water spill in the Reactor Building. The request was for a chemical analysis only (fluoride, chloride, sodium, and silicate) per the requirements of Regulatory Guide 1.36. The Chemistry Department was not requested to do a structural analysis of the blankets. In addition, the analysis was only performed on samples from the approximately fifty-seven Nukon blankets that were affected.

It was the insulation subcontractor QC's recommendation on May 9, 1984, to scrap the blankets when it was found that they became stiff and brittle after they had been dried out. On May 23, 1984, nineteen additional blankets that had been protected by finished metal were also found to have been wetted by borated water. It was found that portions of these blankets could be reused.

The issue addressed by this allegation was previously identified, evaluated and resolved by management.

Allegation 35

Dosimeters were not worn by workers in the Reactor Building while fuel was being loaded in the Reactor Core. SNUPPS Radiological Emergency Response Plan requires that all personnel entering the controlled areas be issued thermoluminescent dosimeter badges. Most workers in the Reactor Building had not been issued badges nor had they been given the necessary radiation protection training. Without radiation detection badges, it was impossible for anyone to determine the level of exposure to radiation while working in the Reactor.

Response

During fuel load a Radiological Controlled Area (RCA) was required to be in effect only when the first two fuel assemblies, C-04 or C-30 (which contained startup sources), were not in the reactor vessel.

After fuel assemblies C-04 and C-30 were in their final positions, a radiation survey of the Reactor Building Refueling Cavity, performed at 10:30 p.m. on June 16, 1984, revealed that no radiation levels existed which would require personnel dosimetry.

When the RCA was in effect, personnel dose was monitored and controlled by thermoluminescent dosimeters, pocket ion chambers, portable radiation detection instruments, and dose rate timesheets.

Personnel entering the RCA had attended Radiation Categories I and II training classes or had been provided with a qualified escort. In addition, they signed that they had read, understood, and would comply with the instructions on the Radiation Work Permit.

It should be noted that the Radiological Emergency Response Plan only addresses radiological controls to be used during an emergency situation. It does not apply during any of the fuel load activities.

The above allegation is without merit.

Allegation 36

Psychological testing conducted in late 1983 and early 1984 failed to remove the potentially bad elements from the work site. Acts of sabotage have occurred since the examination was administered. On July 4, 1984, there was such an act. Breakers in the Motor Control Room in the Auxiliary Building were shut off. It has been reported that in connection with the circuit breaker shut off, a voice announced over the communications system at the plant, "UE - Have a nice fourth of July". For the following days, craft workers made a joke about "UE - Have a nice day".

Allegation 37

The psychological test failed as a screen for employees, but served as a means of harassment. Workers were coerced into taking the test. Everyone on site was given an opportunity to take the test. The test was not required although non-tested employees who had been on site for less than three continuous years of service could not be employed in restricted areas, that is, behind the fence. Those who refused the test faced certain termination for lack of work opportunity.

Allegation 38

The psychological test, the Minnesota Multiphasic Personality Inventory is a test intended for psychological diagnosis. There is no pass or fail standards for a diagnostic test. At the Callaway site, a pass/fail system was imposed on the test. In fact, several dozen employees were terminated because they failed to pass the test.

Response

Because of the similarities of Allegations 36, 37, and 38, they have been addressed in the following single response:

The requirements of 10CFR, paragraph 50.34(c) state that each license applicant shall develop a Physical Security Plan. In order to satisfy this requirement a Physical Security Plan (PSP) was developed as part of the Callaway Plant Security Plan which was approved by the NRC. The plan was based on ANS 3.3-1982 in which paragraph 5.4.5.1 states that the Physical Security Plan shall establish a personnel screening process for authorizing unescorted access. Part of this screening process shall include a psychological evaluation using a valid written personality test or other professionally accepted clinical assessment procedure. The PSP states that all non-Union Electric personnel granted unescorted access into protected areas of the plant shall satisfy screening requirements identified in ANS 3.3-1982 or shall meet the equivalent reliability established by three continuous years of trustworthy employment with their current employer.

The contractor for Union Electric's psychological screening is the Institute for Personality and Ability Testing (IPAT). Tests were administered under the auspices of the IPAT Corporation. All scoring and interpretation were performed by IPAT staff.

It is a stipulation of the Callaway Plant Operating License, page 8, that Union Electric maintain in effect and fully implement all provisions of the Commission's approved Physical Security Plan.

The test was not administered as a form of harassment, but was administered in compliance with the NRC approved PSP.

Psychological screening increases the ability to identify and reduce aberrant behavior.

The Minnesota Multiphasic Personality Inventory was not the test employed by Union Electric. The IPAT test was used by Union Electric and interpreted by IPAT staff who can appropriately differentiate between those individuals who are suitable for unescorted access and those who are not. The test was not administered to determine personnel to be laid off at completion of construction but was used, in accordance with security regulations, to determine an individual's suitability for unescorted access.

The specific incident mentioned in Allegation 36 was thoroughly investigated by Union Electric. The NRC has reviewed and accepted the results of the investigation.

The issues contained in these allegations are without merit.

Allegation 39

The general attitude of workers about construction operations at the Callaway Nuclear Power Plant is that it is a disgrace to the construction industry.

Response

The general consensus of construction personnel remaining at Callaway is that the attitude of workers during construction was good and that the majority of the workers were proud of their accomplishments. Interviews of various craft on October 17 and 18, 1984, showed that this satisfaction of a job well done still prevails.

Construction forces at Callaway at times exceeded four thousand people who were required to work within established guidelines and procedures. It should be expected that a limited number of individuals would find it difficult to conform to the project requirements and complain of the supervision and the quality of the other craftsmen's work.

Inspections performed by the NRC have shown that Callaway is above average for the industry in quality and performance.

This allegation is without merit.

Allegation 40

There have been enormous amounts of cost overruns at the plant. There were excessive amounts of manpower on site. Approximately 200 electricians were hired in late 1983. Despite this almost one-third increase in manpower, there had been no increase in the work assignments. In general, the plant was overwhelmed with manpower. Seven, ten to twelve hour shifts became mandatory. Employees who could not maintain this demanding work schedule and missed a day of work were terminated. A medical excuse, a death in the immediate family, or a call to jury duty were the only acceptable excuses for any absence. Bogus medical excuses were available on site for three dollars. Less work was done during this manpower overload than previously in an eight hour day.

Allegation 41

People were idle on the job site. Some slept at work; a few brought in alarm clocks to wake them up in time to go home.

Allegation 44

Poor management was another cause of the cost overruns at the plant. For instances, it is reported that two electricians spent eight hours hanging one electrical light fixture. This fixture could have been hung by one man in one hour. Much of the delay was due to the lack of work assignments. Work assignments were required for any job on site. Sometimes a worker would be idle for one or two days waiting for such an assignment. In the meantime, the worker would appear to be busy or would just sit around until he was issued a work assignment.

Response

Because of the similarities of Allegations 40, 41, and 44 they have been addressed in the following single response:

A review of Personnel Department records indicated that the electrical manpower, on a monthly basis, remained relatively constant from June 1, 1983, through December 30, 1983. During this period, a total of 228 electricians were hired and 225 were terminated. A review of work assignment records revealed that a backlog of work assignments was available at all times during this period.

Supervision planned their crew activities two weeks in advance in order to maintain construction schedules. Working hours varied from five eight-hour shifts to seven twelve-hour shifts depending on construction schedule requirements for a particular discipline and work area.

Site policy as noted in the "Craft Employee Handbook and Safety Guidelines" stated the following: "Repeated absences or tardiness are defined as twice (2) in a week or five (5) times in a month or eight (8) times in a year". When these limits were reached by the individual, a reprimand was issued for the next incident of absenteeism. Upon receiving three reprimands for absenteeism within the established time frame, the individual was terminated.

In a discussion with the Primary Contractor's Labor Relations Department on October 24, 1984, it was noted that follow-up on a random basis is performed on medical excuses. Approximately six craft personnel were terminated for bogus medical excuses.

There are no documented instances of persons using alarm clocks for the reasons alleged. However, there have been eighty-six terminations for sleeping, and three for being in the prone position or sitting down during working hours. These terminations were in accordance with the "Craft Employee Handbook and Safety Guidelines".

The issues addressed by these allegations were previously recognized, and appropriate actions were taken by management.

Allegation 42

Illegal drugs, alcohol, gambling, and prostitution could be found on the job site. In February of 1984, seven Quality Control employees were fired for alleged drug use. Please refer to the attached articles from the Kingdom Daily Star-Gazette. The Government Accountability would like information about the drug-related terminations and related developments at the Callaway Nuclear Power Plant, including but not limited to, the attached list of questions.

Response

Detailed discussion of the referenced terminations will be withheld to protect the privacy of the individuals involved. Furthermore, this information is considered critical to the Primary Contractor's defense of its actions in current civil litigation that was brought by one of the terminated employees.

Union Electric does not concur with the allegation that certain illegal activities were prevalent at this project. At the same time, it would be naive to assume that the type of problems that beset society in general would not be reflected to some extent in the sizeable work force employed at the Callaway Project. Project management used good judgment in setting up clear and well defined work rules that were communicated to all employees and implemented when necessary. Management actions taken to eliminate potential problems include the following:

- o Inspections of lunch boxes and packages of all personnel entering the site
- o Instructions (orientation, gang box meetings, pay check notices) clearly stating the work rules and penalties for offenders
- o Random periodic site inspections including the use of specially trained dogs and their handlers
- o Institution of an alcohol and drug awareness program presented to all supervision

- o Field monitoring by supervision and security forces
- o Termination for violations of the jobsite alcohol and drug policies

The issues addressed by this allegation were previously recognized, and appropriate actions were taken by management.

Allegation 43

Workers were almost encouraged not to accomplish too much too quickly. One witness reports that he was physically threatened at work for working too hard. He told his foreman and it was taken as a joke. Other workers report that crews were eventually split up if they were working too fast.

Response

New employees were given a copy of the "Craft Employee Handbook and Safety Guidelines" which contains rules established to set goals and guidelines for the employees.

Crew schedules were established, and the crews were held accountable for maximum productivity in order to meet these schedules.

Crews were split up or re-organized if production was not progressing at an acceptable production rate with a satisfactory level of quality, or for orientation of new crew members.

Written reprimands or terminations were given for the following actions (not all inclusive):

- o Loitering and wasting time during work time
- o Poor work performance, including both quality and quantity
- o Physical threats or actual violence

The issues contained in this allegation were adequately covered by project procedures and appropriate actions were taken by management.

Allegation 45

Cost overruns can also be attributed to the high volume of discarded materials. For instance, one individual reports that over the course of his employment as a dump truck driver, he dumped several thousand pounds of welding rods. Welding rods are very expensive; many companies control the rods when the rods are issued to the welders as well as when they are returned. Daniels, on the contrary, only controlled these rods when they were issued to workers. It is reported by one worker that he has seen, on several occasions, welders take out ten pounds of welding rods in the morning, not use any of the ten pounds of rods during the day, and later dispose of the ten pounds in the barrel provided on site.

Allegation 46

Barrels were provided on site for disposal of welding rods. The barrels were filled with welding rod stubs as well as unused welding rods. These barrels were later dumped in on-site landfills. Welding rods were prohibited in the landfill. It was also against regulations for workers to dump their garbage from home in the landfill, but this was routinely ignored. Many people, including the general supervisor, would bring garbage from home and dump it in this landfill.

Response

Because of the similarities of Allegations 45 and 46 they have been addressed in the following single response:

Site specific procedures based on ASME/AWS code requirements set forth methods and requirements for the monitoring, controlling and returning of welding electrodes. These procedures require that covered electrodes be maintained in a designated temperature range once the hermetically sealed containers have been opened, by placing the electrodes in temperature controlled ovens if they are not immediately used. Electrodes which have been removed from the ovens for more than a designated period of time are destroyed or used in training. The number of electrodes removed from the sealed containers was minimized to prevent excessive waste.

Numerous NRC and QC inspections, and Union Electric and Daniel International surveillances and audits have verified the implementation of strict electrode control at Callaway Plant as meeting or exceeding project procedures and ASME/AWS requirements.

In the interest of reducing overall plant cost, electrodes which are identified to be outside of project requirements were shipped off-site to the training center. Electrodes which were not usable were destroyed and placed in locked scrap electrode containers (55 gallon drums). As the barrels were filled with this scrap they were properly disposed of.

It should be noted that workers and general supervision were not allowed to dump garbage directly into the landfill; however, dumpsters were located in the craft parking lot area to assist in maintaining this area free of debris. The dumpsters were then emptied into the landfill.

The issues contained in these allegations were adequately controlled by management.

Allegation 47

Many acts of sabotage have also been reported. The NRC, in its latest inspection reports, admits to eleven acts of malicious mischief regarding the destruction of electrical cables. Workers have found various items in pipes such as scraps of steel wire, electrical cables, two by four inch wooden boards, and welding rods. These pipes had to be cut open in order to remove the material. It was generally understood by workers that these acts were done deliberately to slow up work production.

Response

The reference made in conjunction to the eleven cut cables has been reviewed, evaluated, and closed in NRC Inspection Report 50-483/84-30.

The internal pipe cleanliness issue was previously identified as a potential concern in a UEQA Audit. The noted discrepancies were adequately addressed, documented and resolved. The resolution resulted in a modified flushing program.

These additional inspection techniques were used in combination with normal cleaning and flushing procedures to assure that all piping systems met or exceeded the required cleanliness specifications.

The issues contained in this allegation were previously recognized, evaluated and resolved.