

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

REGION V

Report No. 50-460/80-14 &
50-513/80-14
Docket No. 50-460 License No. CPPR-93 Safeguards Group _____
50-513

Licensee: Washington Public Power Supply System
P. O. Box 968
Richland, Washington 99352

Facility Name: Washington Nuclear Project Nos. 1 and 4

Inspection at: WNP-1/4 site, Benton County, Washington

Inspection conducted: March 6 - July 17, 1980

Inspectors: *R. C. Haynes* 11/25/80
for A. D. Toth, Senior Resident Inspector Date Signed

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Summary:

Investigation during period of March 6 - July 17, 1980
(Report Nos. 50-460/80-14 and 50-513/80-14)

Investigation of 33 allegations received anonymously by letter regarding concrete construction and reinforcing steel work activities.

The investigation involved 88 inspector-hours on-site by one inspector and one investigator.

Findings: No items of noncompliance or deviations were identified. Many of the alleged matters were already subject of licensee investigation and corrective actions arising from allegations received by the licensee in April 1979.

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Background

An anonymous letter was received by the NRC Region V office on February 20, 1980. This letter listed thirty-three "Allegations Against A.W.S.H." regarding work by the WNP-1/4 general services building concrete contractor (Guy F. Atkinson/Wright - Schuchart - Harbor, a joint venture). Twelve of these items included items similar to those which the licensee had received on April 26-27, 1979 and had investigated and acted upon. NRC had previously reviewed the licensee's progress toward resolution of the findings of their investigation (Ref. IE Inspection Reports 50-460/79-07 and 79-08). Licensee followup is represented partially in letters between the constructor-engineer (United Engineers) and the contractor. These letters are identified as UEAT-79-5280, 5333, 5353, 5437 and 5144, and ATUE-79-5485 and 5672, which were examined by the NRC inspector.

Investigation Approach

Some of the allegations in the letter to the NRC suggested that QC inspectors were being intimidated by crafts or QC management, and that construction inspection records may be inaccurate. To ascertain if problems such as these existed, and to probe for substantiation of other of the allegations, an NRC Region V investigator and the NRC resident inspector conducted interviews of sixteen staff members of the AWSH QC organization. A cross section of personnel in the contractor's organization was selected for interview which included QC inspectors, auditors and clerks, level I and level II rebar and concrete inspectors, day shift and night shift personnel. A generally standard set of questions was read to each person to assure anonymity of responses; additional questions were also asked. In addition to direct knowledge, inquiries were made regarding hearsay. Information was supplemented by the resident inspector's accumulated data from routine contacts with AWSH QC personnel.

The allegations were for the most part vague. Many referred to procedural deviations which in themselves would not represent defective construction. However, the NRC inspectors attempted to ascertain any such procedural deviations to aid in assessing the general credibility of the allegations. A recent licensee audit and NRC inspection findings relative to the current practices were also considered in this assessment.

The writer of the anonymous letter was not identified during this investigation. The source of the writer's information is not clear, but its origin appears to be associated with the April 1979 period when the licensee received similar allegations.

Findings

The following paragraphs quote each allegation in its entirety and summarize the NRC findings. Several allegations contained elements which appeared to be supported by personnel interviews or other evidence. However, an item was not considered to be substantiated unless violation

of a regulatory requirement was involved. Of the 33 allegations, seven had the potential to be so substantiated. However, each had been addressed by the licensee's investigation of May 1979 (Ref. 1), and corrective actions taken in accordance with their quality assurance program.

The information compiled as a result of this investigation did not reveal any significant defects in the construction of plant structures and no violation of regulatory requirements were identified during this investigation. However, results of this investigation reinforced the conclusions and corrective actions identified by the licensee for the contractor to improve the training of personnel. This is also supported by other NRC findings and licensee audit findings in 1979 (see NRC Inspection Report items 460/79-09-02, 460/79-10-02, 460/79-10-03).

The allegations, as received by NRC, were as follows:

- 1.a. "Rebar lost is being replaced with template of same size and/or amount of pieces to keep from reordering."

Although this statement is vague, it seems to imply that incorrect materials were being used.

Reinforcing steel at this site is of standard grade and is supplied with material certifications and is receipt inspected by QC inspectors prior to being released to the jobsite. Hold tags are placed, and material is quarantined if discrepancies exist. Rebar is used as templates to support other rebar patterns during fabrication, or as patterns for cutting/bending other rebar. However, the template and pattern rebar is qualified and accepted material. If template rebar is installed and the rebar met size and configuration requirements, such usage would be satisfactory. Rebar configurations and sizes are inspected prior to concrete placement.

None of the personnel interviewed knew of any occasion where the alleged matter occurred.

- 1.b. "Fabrication yard not complying with procedure for refabbing steel sent back from the field with red tags attached."

Ref. 1 Report of Investigation of Allegations Concerning Guy F. Atkinson/Wright Shuchart/Harbor Joint Venture's Activities on the WNP-1/4 Project. (Cover memorandum QA-1/4-79-281, T. J. Houchins/M. W. Hultgren dated May 21, 1979)

The alleged condition is too vague to specifically assess. However, problems with reinforcing steel control were confirmed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item PHD-I); tagging was one aspect.

The licensee requested corrective actions (Ref. 2 and 3) by AWSH who then revised procedures and provided personnel training. These actions were checked by the licensee. Additional corrective actions were requested in April 1980 (Ref. 4) due to AWSH "failure to achieve compliance" because procedures were inadequately implemented. Additional training was a key element in the action request and AWSH commitment (Ref. 5).

1.c. "Red tags not being processed properly after being placed on steel."

Problems with reinforcing steel control were confirmed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item PHD-I) and corrective actions taken. See item 1.b. above.

1.d. "Steel taken from an erected wall and placed in another wall without QC approval. Steel was then ordered for that wall as being lost."

The allegation was not substantiated.

None of the personnel interviewed knew of any occasion where the alleged matter has occurred, but some acknowledged the possibility since there are many cases where rebar is reported lost and replacement pieces are required. Rebar is tagged and designated for specific locations and placement at a different location would be contrary to the contractor's procedures. Since a standard grade material is used and rebar is receipt inspected to assure that grade was received, the principal parameters appear to be size, length and shape of the bar for any particular location. These parameters are checked by QC inspectors for each location prior to concrete placement. The fact that some required bar was obtained from a different

Ref. 2 Management Corrective Action Request, UEAT-79-5280-(253) dated June 18, 1979.

Ref. 3 Management Corrective Action Request Evaluation of Response, UEAT-79-5353-(253) dated August 14, 1979.

Ref. 4 Management Corrective Action Request Verification of Correction Action, UEAT-80-5144-(253) dated April 14, 1980

Ref. 5 Management Corrective Action Request Verification of Corrective Action, G. F. Atkinson Company/WPPSS dated May 5, 1980.

location might be an inventory control inconvenience, but apparently of no significance in regard to assuring sufficient acceptable rebar and proper location.

- 1.e. "Inspectors have no way of legally closing out the NCR (nonconformance report) log for red tags which they have put on resteel resulting in having to close out the log and the NCR without direct knowledge."

The alleged condition appeared to be accurate but no wrongdoing was found as a result of the problem. However, problems with nonconformance report procedures and reinforcing steel control were confirmed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item PHD-I and SD-IX). Corrective actions included revision of procedures and training of personnel.

None of the personnel interviewed expressed dissatisfaction with the current hold tag and NCR system, nor had they recently experienced having a hold tag originated by them removed without their knowledge. (Although such removals had been confirmed during the earlier licensee investigation, it appears that the situation has improved). There is no NRC requirement nor is it always practical that a QC inspector be informed of disposition of items identified by him.

- 1.f. "Bundles of steel in lay down areas with no tags on them. Red tags attached one day are found missing the next with nice new trace tags suddenly applied."

Problems with reinforcing steel control were confirmed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item PHD-I)

None of the personnel interviewed knew of any occasion where hold tags were deliberately removed without proper disposition of the associated discrepant conditions.

Where identification/trace tags have blown off, hold tags are applied until the identification of the bar and its intended location are established. Various information/records may be used to ascertain this identification, including shipping notices, receiving reports, NCR logs. There is no basis to conclude that unacceptable rebar has been placed in the plant structures. During the licensee's investigation of May 1979, information was obtained indicating that hold tags were being removed by unauthorized personnel. That situation has apparently improved.

- 1.g. "Green tags being made out in advance, and hung on rebar on 'hanging' days by unqualified people."

The alleged condition was confirmed during the investigation conducted by the licensee in May 1979 (Ref. i Item SD-X).

Personnel interviewed also described instances where a qualified rebar receiving inspector inspected rebar, returned to his office and made out green tags, and gave them to a trainee to hang on the designated rebar. This practice was stopped in April 1979.

- 2.a. "Field cure samples not stored in accordance with field conditions."

The allegation was accurate but the condition did not represent a quality problem.

Concrete cylinders may be cast for the purpose of ascertaining potential ultimate strength of the as-placed concrete, or for checking the early strength of the as-placed concrete permitting early form removal or other early loading of the structural areas (reference ASTM-C31-69 part 7.3 and 7.4 respectively). The "early loading purpose cylinders" are generally designated "field cure samples" and are required to have curing conditions similar to the structure parts which they represent for the reactor containment. Such cylinders are wired to the reinforcing steel. If early loading or form removal is not a consideration, the field cure samples are immaterial and no attempt is made to assure curing in accordance with field conditions. No basis was found to conclude that the alleged improper field cures were other than for that reason.

- 2.b. "Concrete tests taken are many times not from the same load i.e. AIR-SLUMP-TEMP tests at the slick line discharge end are many times taken so late that they are taken from the next load. Result, the test is non-representative."

The allegation was accurate but does not represent a quality problem.

Concrete testing is performed in order to ascertain that the batch plant process is reasonably constant. Sampling at approximately regular intervals is performed. Some degree of randomness is desirable, so as to compensate for deliberate or inadvertent bias in the process. It is not necessary to assure that concrete samples are taken from a particular batch for these routine tests.

- 2.c. "Many times the batch tickets are made out in advance, resulting in penned in corrections."

The allegation was accurate but does not represent a quality problem.

Batch plant batch-tickets are printed by the computerized scale equipment batchings. Tickets are checked by the on-the-spot QC inspector for the proper water-cement ratio. Printer malfunction or other occurrences may create need to make a correction on a printed ticket. Such changes are initialed by the author. This appears entirely proper.

- 2.d. "Concrete repairs being made without proper paperwork or records i.e., middle of the south wall of unit 4 at the haunch. I saw no inspector during this repair."

The allegation was not substantiated.

None of the personnel interviewed knew of any occasion where concrete repairs had been made without required QC inspection. A repair at the alleged location was not identified. There appears to be no question regarding proper performance of the work. An AWSH procedure QCCP-13 does require QC inspection of repairs.

- 2.e. "Twice the amount of steel required placed in both the pipe chase rooms of unit #1 therefore reducing the amount of concrete required to meet design specs of the wall."

The inspector did not attempt to ascertain the accuracy of the allegation. The alleged construction inadequacy was not substantiated.

Additional steel may be placed in a concrete placement area as rebar or structural shapes to support other steel. The steel has much higher strength than the concrete, and its presence in lieu of concrete would not be structurally detrimental. Such supplementary steel is construction convenience and does not appear on design drawings. Its presence is not contrary to the applicable codes.

- 2.f. "Inspectors walking away from trucks discharging concrete for many times the entire period of off-loading."

The allegation appears to be accurate but does not represent a quality problem.

Some of the personnel interviewed were aware of this practice. Level II inspectors sign the delivery ticket for each truck arriving at the pumps. The inspector has on occasion then left the receipt area to observe the placement, assist a level I inspector, or other cause. There does not appear to have been occasions where the inspector failed to return prior to unloading the next truck.

The contractor QC management stated that it was generally their intent that the level II inspector remain at the truck discharge except for short absences.

The AWSH procedures do not specifically require continued presence of a QC inspector at the truck discharge. Such presence is not required by NRC regulations.

2.g. "Concrete repair made in northeast corner of south pipe chase room of unit #1 incorrectly.

"Rebar less than 1/4-inch from surface left as was
Depth of void 20-24 inches
Width at surface 18 inches

"Area chipped and made ready for patching in 30 minutes. Less than 1 hour later this job was done and no knowledge of the records reflecting work done to rebar or the proper wording on the NCR. This "patch job" is exposed to earth."

The allegation was not substantiated.

A 2" x 2" x 18" deep "void and rock pocket" occurred in concrete placement #1-GSB-1987 at this location. Its existence and repair are documented on nonconformance report number 1-CNCR-254-877. The pocket was chipped out to 10" x 13" at the surface and patched with a fast setting epoxy grout approved by the Engineer. The repair was expedited, using the epoxy grout #2338 and binder #2335, to permit earth backfill and compaction work to continue. QC inspection is documented and three AWSH inspectors and foremen attested to having witnessed the chipping out, surface preparation and repair with rebar-to-forms criteria not having been violated. The repair had been identified and dispositioned on an expedited basis since the defect was missed by the original pour inspector and subsequently noticed while removing trash to allow backfill work.

Although the allegor appears to have identified the existence of an actual repair, there is no evidence to suggest that the repair was done improperly.

- 2.h. "Numerous amounts of concrete pour packs lying around on desks unsigned for weeks at a time making it nearly, if not impossible, to remember the correct sequence of events."

The allegation was not substantiated.

Personnel interviewed indicated that day shift quality control personnel would leave concrete pour-packs on their desks overnight rather than return these to the files; this created some difficulty for night shift personnel who would then have difficulty locating the records applicable to the work. Personnel interviewed stated that work loads sometimes were heavy and may have involved handling multiple pour packs, but they indicated that the situation was manageable. Personnel indicated that management insisted that the pour packs be put away evenings, and that the situation has improved. An AWSH QA management directive was posted on the bulletin board to this effect. Adequate corrective action was apparently taken by AWSH management as a result of the situation which developed.

- 2.i. "Pour packages lying all over QC and QA departments for up to a month at a time in violation of record keeping procedures of the QA manual."

Some aspects of the allegation were true but these problems had been corrected by the contractor according to his quality assurance program.

Personnel interviewed indicated that pour packs had at one time been routinely left out of fire-protected files overnight, which was contrary to the AWSH procedures (e.g. QCCP-10 dated 5/21/78). The practice has been discontinued as discussed in item 2.h. above. No items of noncompliance were currently observed by the inspector at AWSH facilities on-site.

- 2.j. "Lead inspectors signing off pour packs as being ready before inspectors have many times ever looked at field conditions."

The apparent allegation that lead inspectors were pre-empting inspector reviews was not substantiated.

Problems with documentation accuracy and completeness of reviews were confirmed during the investigation conducted by the licensee in May 1979 (also see item 2.m below). Discrepancies identified by the licensee included AWSH completion of concrete placements although outstanding nonconformance reports existed for items in the said placements, and AWSH personnel not

totally familiar with documentation and review requirements. These findings indicate incomplete or insufficient review prior to sign-off by lead inspectors, but do not necessarily support the implication that lead inspectors pre-empt support inspectors from completion of the field work. The licensee took corrective action and has performed routine surveillances to ascertain pour pack adequacy (e.g. surveillance reports SR/CNR-442, 443, 702, 939, 1097, and 1173 dated April 12, 1979 through April 30, 1980).

Some documentation discrepancies have been found by UE&C in pour packs for recent pours of the containment walls. Such packs are reviewed by the UE&C QA personnel and by the ASME authorized nuclear inspectors prior to each such pour. An excessive number of discrepancies were found and brought to the attention of AWSH. This again indicates incomplete reviews by AWSH staff.

Personnel interviewed by NRC stated that their workloads were sometimes large, but they expressed satisfaction that they could take whatever time was necessary to complete their reviews. There was no indication that lead inspectors were pre-empting their reviews.

- 2.k. "Level I inspectors standing concrete placement duties in strict violation of ANSI-45.2.6."

The allegation was not substantiated.

Personnel interviewed stated that level II personnel accept and sign for the concrete delivery and are available for consultation during the concrete placements at the general services building. Level I inspectors may stand watch over the placing activities at the forms. No violation of ANSI-N45.2.6 was found.

- 2.l. "Curing inspectors not taking or giving true readings of actual conditions of all cures in the field."

The allegation was correct but had been previously corrected by the contractor.

Problems with cure inspection was confirmed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item PHD-3). The licensee identified misinterpretation of requirements leading to measuring temperatures in enclosures at one versus multiple points. Similar cold-weather curing practice concerns were raised by NRC routine inspections and corrective actions had been taken and verified.

Personnel interviewed identified no recent problems in this area.

- 2.m. "Foremen and Supervisors coming into QC department at night and arguing and fighting over status of paper work to such an extent that many times a pour is released without actually being ready."

The allegation was not substantiated.

Personnel interviewed stated that construction department personnel have on occasion pressed for completion of paperwork prerequisite to concrete placements, but they also expressed satisfaction in their authority/ability to resolve such matters in the context of their work assignments. They noted that with multiple placements scheduled the workload increases. With the pressing schedule there appeared to be an increase in documentation errors.

The licensee investigation of May 1979 (Ref. Item SD-6) identified a problem with such documentation errors and actions were taken to improve the situation. However, such errors continue to occur. This problem is continuing to receive attention from the contractor and the licensee.

- 2.n. "Test equipment 'air pots' do not function properly, nor are they used properly."

The allegation was not substantiated.

Although some of the personnel interviewed knew of occasions where an air pot had malfunctioned, they indicated that corrective action was taken. They knew of no improper operations. The inspector examined each of the seven pressure-method devices used by the testing contractor (PTL) and he interviewed several PTL inspectors and a laboratory technician and three AWSH QC inspectors relative to the maintenance, performance and technique of using the devices. He considered this information relative to ASTM-C-231-72T, and he specifically examined condition of seals and sealing surfaces, performance of pumps and pressure gages, availability of spare parts and assignments of an individual to routinely perform maintenance and calibration. He observed several tests and interviewed ten PTL inspectors relative to rodding, strike-off, injection and relief of water, sequence of valving, actions to eliminate air bubbles, jarring of gages, preset of pressure and timing for conduct of

the test and taking of readings. Special attention was given to a possible mechanism for jamming of the pressure injection lever to give inaccurate readings.

The equipment appeared to perform satisfactorily and the PTL inspectors identified no uncorrected problems. They each indicated total satisfaction with ability to obtain a replacement meter readily when field problems occur. PTL inspectors demonstrated satisfactory knowledge of the governing procedures.

- 2.0 "Heaters used for temperature control on concrete cures are sometimes pointed directly at a very small portion of the wall resulting in improper curing for that section of wall."

The allegation is partially true but the problem has been managed effectively such that quality of construction has not been adversely impacted.

Personnel interviewed stated that on occasion a heater would be found in an unacceptable position, but the QC curing inspector would have the construction personnel correct the condition. No uncorrected conditions were identified. No fires, or burning of forms, were identified. There is no basis for concluding that the structural integrity of the concrete would be significantly compromised as a result of the alleged condition. (Also see Item 2.1 above.)

- 3.a. "Inspectors inspecting different phases of work in which they are not qualified or certified to do, i.e. electrical."

The allegation was not substantiated.

The AWSH electrical related work involved placement of conduit and building grounding cables, which require little specialized inspection training. Interview of the AWSH principal inspector for electrical related activities affirmed his familiarity with applicable criteria, and determined that he provides consultation to other inspectors relative to building grounding cable splicing. Separate certification status of inspectors did not appear warranted for this area.

Refer to item 3.f below, relative to general training and qualifications.

- 3.b. "Level I inspector made in charge of cad-weld records in strict violation of the rules."

The allegation was true in part but is not a quality problem or issue.

There is no NRC requirement for records clerks to be qualified to level II (ANSI N45.2.6). The cad-weld clerk is not qualified as level II. Although the cad-weld clerk may bring document discrepancies to the attention of the responsible inspector, this does not appear to constitute the level II review and approval of preliminary reports referred to in VII-4320(i) of ASME Section III Division 2.

- 3.c. "Inspectors being intimidated contrary to their real knowledge of events."

The allegation was not substantiated.

The alleged condition was probed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item PPD-I). The licensee confirmed that some degree of intimidation of QC personnel by craft personnel does exist, although not to a detrimental level.

Personnel interviewed stated that they knew of no intimidation of QC inspectors, other than personality conflict items. An inspector involved verified that personality aspects were involved and that management support was to his satisfaction in the incident (which involved cadweld inspection). He did not consider that he had been seriously threatened with physical harm. There were no statements which would suggest that inspection findings are tempered because of such conflicts.

- 3.d. "Assistant managers' and assistant supervisors' attitude of 'don't tell me about it', leaves many inspectors with decisions to make under pressure from both sides of the fence."

The allegation was not substantiated.

None of the personnel interviewed indicated any lack of support from management, and several persons expressed satisfaction with existing QA/QC management in this regard.

Also, the licensee investigated a similar allegation during the May 1979 investigation (Ref. 1 Items PP-II, SD-I). The licensee interviews at that time similarly could not substantiate the alleged condition.

- 3.e. "Inspectors 'put on the carpet' for telling fellow employes about discrepancies, or making an issue of trying to do something to correct them."

The allegation was not substantiated.

None of the personnel interviewed knew of any circumstances which they considered to be a problem. Also, the licensee investigated a similar allegation during a May 1979 investigation (Ref. 1 Item PP-IV). The licensee interviews at that time similarly could not substantiate the alleged condition.

- 3.f. "Inspectors made level II for the sake of filling required slots without proper training or experience."

The alleged condition was confirmed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item SD-VII).

One level II inspector was identified by the licensee as not meeting education/experience requirements of the ASME III Code. Similarly, certification of other inspectors to ANSI-N45.2.6 was also questioned in several cases.

Licensee and AWSH measures have been taken to assure that each current inspector is properly qualified and certified, and to document the basis for previous certifications of personnel. The licensee's investigation did not identify any other inspectors with inadequate certification bases. These actions did assess the implication of previous non-certifiable personnel performance or non-performance relative to completed work. The licensee's investigation determined that the inspector in question had not performed any level II acceptance inspections and the inspector certifications had been voided on May 6, 1980.

- 3.g. "Many certified rebar inspectors can't read drawings in the field."

The allegation was not substantiated.

Personnel interviewed were asked about their training and training of their peers; they were specifically asked how they obtained their capability of reading rebar drawings. The rebar inspectors stated that initial QC assignments involved cadweld inspection, which served as a good introduction to general rebar configuration drawings. Some comment was expressed that some specific training in blueprint reading would be of interest to the QC personnel. This same comment was offered

to the licensee during his May 1979 investigation. The allegation identified no specific individuals, and there appeared to be insufficient basis to justify examination of individual QC inspectors to independently evaluate their capability.

- 4.a. "Isn't it amazing how many times you can see the same inspector's handwriting on the cadweld reports. That guy really put a lot of hours in and went a lot of places all at once didn't he?"

The implied allegation was not substantiated.

Personnel interviewed and work observations show that visual inspections of cadwelds may be accomplished in just a few minutes each. To observe 40-50 completed cadwelds for one day appears to be reasonable for one inspector. The NRC investigators did not attempt to review sufficient cadweld records to identify individuals QC inspectors and their performance each day.

- 4.b. "I also went into receiving once for a code number and found total confusion. The number I was given later turned out to be for something totally unrelated."

The allegation was not substantiated.

The inspector observed the receiving QC inspection office area on two occasions. Records were available in file cabinets and logs. Personnel were busy with on-going activities, but were able to respond acceptably to requests for information.

- 4.c. "I also found a couple of items in the field before they were ever received on site. I thought that was interesting."

The implied allegation was not substantiated.

The investigators ascertained that procedures and practices exist for receiving inspection, identification and tagging, and control of AWSH material. The licensee investigation of May 1979 (Ref. I Item SD-III) determined that a weakness existed in the system, which might allow the potential utilization of material during night shift operations without benefit of receiving inspection. No actual discrepancies were identified.

- 4.d. "Training sessions are so poor or, nonexistent to such a point that to even call them such would be pure hypocrisy. One safety meeting opened and closed with the following words, DOUBLE HOOK, DOUBLE HOOK, DOUBLE HOOK. ANYBODY HAVE ANYTHING TO SAY. THAT'S ALL."

The alleged condition was confirmed during the investigation conducted by the licensee in May 1979 (Ref. 1 Item SD-IV). At that time, QA Engineer training was described "fluctuated between adequate and non-existent". The licensee required AWSH to take corrective action (Ref. 2) and verified such action in April 1980 (Ref. 4).

The personnel interviewed were asked about their training and training of their co-workers; personnel expressed general satisfaction with initial training efforts, but indicated a desire for improved on-going training, particularly with respect to procedure revisions. Night shift personnel particularly felt neglected in this respect. A recent commitment to the licensee (Ref. 5 Item 4) includes the AWSH plan to improve training in procedures/changes. Also, personnel interviewed stated that the alleged safety meeting occurred shortly after an accidental death which may have been avoided if safety belt double-hook procedures had been followed by the individual. The investigator found that the safety meeting approach to the topic was quite appropriate in view of the circumstances.

5. Management Interviews

The NRC Senior Resident Inspector met with Messrs. T. J. Houchins and E. C. Haren on March 14, 1980 after interviewing the AWSH personnel. The inspector discussed his findings at that time. Subsequent followup and further investigation of the allegations confirmed the earlier findings.