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January 5, 1984

Richard C. DeYoung, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. DeYoung:

On September 14, 1983, the Government Accountability Project (GAP) submitted a document to the Nuclear Regulatory Commissioners which requested (1) that the NRC modify the construction permits for the Catawba Nuclear Station, Units 1 and 2, to require a "review by an independent contractor." GAP asked that this review include: (a) a "100% reinspection of the safety-related areas of the plant"; (b) a review of "the design deficiencies and the breakdown in the design change control systems which render the . . . FSAR design . . . inaccurate and incomplete"; and (c) a review of "the quality assurance/quality control program which has existed with major weaknesses in the Catawba facility since the beginning of construction" (GAP Petition, p. 1). In addition, GAP seeks (2) a "management audit of the Catawba upper and mid-level managers responsible for both design and implementation of the Catawba (QA/QC) program"; (3) an investigation by OI of "the deliberate mishandling by Duke Power Company management of certain serious complaints by Catawba welding inspectors" to determine the existence of possible violations of 10 C.F.R. Parts 19 and 21 and 29 C.F.R. Part 24; and (4) a "Commission review" of the ongoing OIA investigation to assure that it encompasses the allegedly improper conduct of Region II officials, (GAP Petition, p. 2).

Duke Power Company submits that the requested relief is unwarranted. To assist the NRC, Duke has prepared a detailed response to the allegations of GAP. This response is attached.

Sincerely,

W. H. Owen

W. H. Owen
Executive Vice President
Engineering and Construction

WHO:md

attachment

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DUKE POWER COMPANY'S RESPONSE TO GAP PETITION

In support of its request that the construction permits for Catawba Units 1 and 2 be modified to require a review by an independent contractor and that an audit of the QA management at Catawba be conducted,[1] GAP identifies five areas of alleged "failures" by Duke Power Company which purportedly demonstrate the "continuing nature of the QA breakdown at Catawba" (GAP Petition, p. 5). These areas of alleged deficiencies are as follows:

A. Failure to ensure that the As-Built Condition of the Plant Reflects the Final Version of an Acceptable Design

B. Failure to Maintain an Adequate Quality Assurance Program to Identify and Correct Construction Deficiencies

C. Failure to Maintain Adequate Controls to Process and Respond to Nonconforming Conditions

D. Failure to Maintain Adequate Material Traceability to Identify and Document the History of all Material, Parts, Components and Special Processes

E. Failure to Maintain an Adequate Quality Assurance Program for Vendors

DPC will address each of these five asserted areas of deficiency below. Because GAP relies heavily upon findings from Duke's Self-Initiated Evaluation

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[1] Duke addresses the need for an OI investigation and the need for Commission review of the ongoing OIA investigation at pp. 51-53.

("SIE")[2] as the basis for its allegations, DPC's response also focuses largely on the SIE findings.

In this regard, it is important to note that the SIE items referenced by GAP were included in an inquiry by an Atomic Safety & Licensing Board empaneled to rule on Duke's application for an operating license for Catawba. An intervenor in the licensing proceeding, Palmetto Alliance, relied upon Sections of the SIE to support a motion to extend discovery in the operating license proceeding and in essence to expand the scope of the admitted QA contention to embrace all aspects of QA. The Licensing Board, in an effort to understand the import of the SIE, called for a presentation by 11 members of the SIE evaluation team, 5 from Duke, 5 from TVA, and 1 from INPO. This presentation is set forth in Transcript Pages 10053-10276 and is attached hereto (Attachment 1) for the convenience of the decision makers. Significantly, this panel stated that the observations and findings regarding design (DC), construction (CC), testing (TC), and quality procedures (QP) set forth in the SIE Report (which includes those relied upon by GAP in its pleading) are not "reflective of a systematic breakdown in the quality assurance program at Catawba" (Tr. 10153-5) and "do not reflect any practice which did or would have led to unsafe construction or operation of the plant" (Tr. 10064-10069).

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[2] During September - November 1982, separate Self-Initiated Evaluations were conducted on the design and construction activities of all nuclear power plants under construction. The evaluations were conducted using criteria and performance objectives developed under the direction of the Institute of Nuclear Power Operations ("INPO"). The evaluation criteria and performance objectives were established as standards of excellence which, if met, would result in a product that clearly exceeded regulatory requirements. The evaluations were designed to point out potential areas of weakness for the utility inspected to evaluate and determine if corrective action was warranted. The evaluation team for the Catawba evaluation consisted of 18 utility personnel, 9 from Duke and 9 from Tennessee Valley Authority. (Tr. 10053-71)

Indeed, Mr. Evans, the Catawba SIE team leader (now a full-time INPO employee) stated that based on his involvement with 9 other evaluations of nuclear plants under construction, the Catawba SIE reflects that "Duke's programs clearly exceed all but one of the other plants evaluated, and I would consider Duke's programs approximately equal to those of the other plant". (Tr. 10063. See Also Tr. 10263.)

It should be noted that the statements of this panel were subject to extensive Board questions (Tr. 10071-10136 and 10260-10274) and examination by the parties, including Palmetto Alliance (Tr. 10162-10230).

After considering the record on this subject and the arguments of counsel, the Licensing Board denied Palmetto Alliance's request. This ruling is set forth in the in camera Transcript pages 948-954 and is attached hereto (Attachment 2) for the convenience of the decision maker. In sum, reliance upon the SIE as a basis for commission action has been rejected by an Atomic Safety & Licensing Board and should likewise be rejected by The Commission.

A. "Failure to Ensure that the As-Built Condition of the Plant Reflects the Final Version of an Acceptable Design"

In Section A of its Petition, GAP attempts to demonstrate that:

> Catawba design documentation does not reflect the plant as designed, and it is unclear whether it reflects the plant as-built. Substantial documentation from Duke Power itself, and confirmation from workers leaves no doubt that Catawba's design and field engineers built this plant 'by the seat of their pants,' not by the book. (Petition, p.6.)

Based on this, GAP asserts that the Catawba plant does not satisfy 10 C.F.R. Part 50, Appendix B, Criterion III.[3]

In support of its assertion, GAP raises issues related to the SIE, allegations of Mr. McAfee, and concerns related to variation notices. These issues are addressed below:

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[3] Criterion III reads:

> Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in Paragraph 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems and components.
>
> Measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations. These measures shall include the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces.
>
> The design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. The verifying or checking process shall be performed by individuals or groups other than those who performed the original design, but who may be from the same organization. Where a test program is used to verify the adequacy of a specific design feature in lieu of other verifying or checking processes, it shall include suitable qualification testing of a prototype unit under the most adverse design conditions. Design control measures shall be applied to items such as the following: reactor physics, stress, thermal, hydraulic, and accident analyses; compatibility of materials; accessibility for in-service inspection, maintenance, and repair; and delineation of acceptance criteria for inspections and tests.
>
> Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design unless the applicant designates another responsible organization.

7-56

Accordingly, DPC's Vice-President Design Engineering initiated a task force in March 1983 to present recommendations for alternatives for an upgraded commitment tracking program.

In April, 1983, the task force made recommendations to the Vice-President Design Engineering for the implementation of a program of design criteria specifications. This program would include compilation of all Design and

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[4] (continued)

a. PSAR commitments, outside those embodied in normal engineering practice.

b. Commitments sent to the NRC after PSAR approval and prior to submittal of FSAR.

c. Commitments identified prior to preparation of the FSAR to be included in the FSAR.

d. Deviation from PSAR commitments.

e. Deviations from FSAR commitments. These deviations are included in licensing documents via normal SAR and license amendments.

2. Commitment and deviation listings have been distributed to Design Engineering Section Heads and updated on no less than a quarterly basis.

3. All SAR and Regulatory Commitments are reviewed by appropriate levels of Duke management prior to submittal to NRC. Quality Assurance procedures require the consideration of SAR and other regulatory commitments in the preparation of calculations, design specifications, and related documents.

[5] Significantly, the SIE was not designed to conduct, in all cases, in-depth evaluations of areas of potential weaknesses to determine if problems existed. (Tr. 10062.) Rather, the SIE took the conservative approach and pointed out to the utility all "observations which reflected a potential for weakness". (Tr. 10063.) It was up to the utility to conduct further reviews to determine if the factual observations had significance. Id. Indeed, based on subsequent and more in-depth review by the members of the evaluation team preparing for the presentation to the Catawba Licensing Board, it was determined that "many" of the findings which appeared to point out weaknesses were not totally valid. Tr. 10151. See e.g., Tr. 10076-7; 10078-9; 10080-1; 10084-5; 10085-7; 10088; 10115-9; 10128-9; 10133.

Construction commitments for Catawba Nuclear Station. This recommendation provided for a program to meet the recommendation of the Self-Initiated Evaluation. This recommendation was approved by management and is scheduled for full implementation on Catawba by May 30, 1984.

b. DC.1-2: No control program for defining responsibility for providing Design input could be found. Input is usually provided on a request basis. (Petition, p. 6.)

The thrust of this finding was that no documented procedures for providing design input were apparent. In response to this finding, a comprehensive review within each line division was conducted. This review determined no procedural changes were needed, based on the following policies and practices:

(1) The organizational responsibilities in the Design Engineering Department are formally documented in responsibility statements. In addition, significant commitments to provide design input are included in an integrated schedule by responsible groups.

(2) The Design Engineering Department Manual documents a Civil/Division interface concept with other divisions which is very specific regarding required structural design inputs. Design input dates appear on design schedules, and information is submitted formally on marked sepias of structural drawings. This program is formalized, well controlled and well understood by responsible engineering supervisors in the Mechanical & Nuclear Division and the Electrical Division. The Civil/Environmental and Mechanical & Nuclear Divisions also use specific interface agreements to define responsibility for various aspects of pipe stress analysis and support restraint design.

(3) The organizational structure of the Mechanical and Nuclear Division provides a logical flow of design inputs which progress from flow diagrams, to equipment data sheets, to equipment specifications, to piping and equipment arrangement designs, to formal documented system checkouts on a scale model, to final system verification analyses in a carefully controlled process. The Mechanical/Electrical instrumentation design process provides the necessary information through flow diagrams, I&C data sheets, I&C details, I&C lists, electrical elementaries and wiring diagrams.

(4) The Electrical Division has numerous work place procedures to address administrative control. Additionally, this division defines responsibility for providing design input through its organizational structure by providing a controlled, logical flow process in performing the electrical designs. For initial design, the Electrical Division makes use of the integrated schedule as a valuable aid in defining, controlling, and scheduling inputs to the design process. This mechanism is used for internal division inputs and schedules as well as defining and documenting needed design inputs from other divisions.

(5) Once initial design is completed and released for construction, revisions to system design are authorized by Design Change Authorization Forms and later by Nuclear Station Modification Requests. These revisions are not entered into the integrated schedule but are tracked by a Data Base "Punch List" maintained by the Project Management Division. This "Punch list" is used to define

parties involved in the revision along with design inputs (I&C information, vendor drawings, etc.) and serves as a method to define and control inputs to the design process.

c. DC.1-3: Design input information is not always provided in a controlled manner. Memoranda serve as the primary vehicle for documenting Design input. (Petition, p. 6.)

Upon reviewing this finding, DPC determined that no corrective action was required because the procedural controls currently in use at Catawba in this area are adequate to provide controlled design input information. Specifically, QA procedures are in place for the control of design input information through the use of calculations, specifications, drawings and correspondence. In addition, reviews of the as-built condition of the plant provide a final verification that correct design inputs are used.

As to the finding that "[m]emoranda serve as the primary vehicle for documenting design input," DPC evaluated this claim and found it to be inaccurate. While correspondence is sometimes used to transmit design information from one design group to another, it is not the primary source of design input information. Moreover, it is controlled by QA procedures which establish responsibilities in issuing design correspondence.

d. DC.1-4: System descriptions and flow diagrams do not always agree as to the current requirements. Several system descriptions were observed to lag revisions of system flow diagrams. (Petition, p. 6.)

The fact that system descriptions are not always kept current with flow diagrams and electrical elementary drawings has absolutely no safety significance. System descriptions are prepared very early in DPC's design process. They are intended as preliminary and general working documents which

provide an overview of the components and function of a particular system, and as a general reference in initiating the more advanced design of a system. They are used as "supporting documents" or guides in the preparation of the more detailed flow diagrams and electrical elementary drawings. These flow diagrams and electrical elementary drawings, rather than the system descriptions themselves, are the controlled design documents which are the sources of information used in the detailed design of a particular system. These controlled design documents are updated in a timely manner.

Because of their limited and preliminary role as a guideline for developing advanced system designs, some system descriptions were not updated regularly before the Self-Initiated Evaluation because this was not considered a high priority matter. In response to the evaluation team's findings, however, DPC's Design Engineering Department agreed to implement various corrective measures to update system descriptions and to keep them current. These measures have been implemented.

In short, in that system descriptions are not considered controlled design documents, the observations of the evaluation team with respect to system descriptions have no bearing on the safety of the plant's construction or upon the quality of its design. Any lag in updating system descriptions has no impact on the final quality or accuracy of station designs, test, and operating procedures, or safety of the constructed plant.[6]

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[6] On page 7 of its Petition, GAP cites five instances from the SIE in which it was discovered that "system descriptions and diagrams did not agree." Similarly, on page 8, GAP quotes from finding DC.2-1, stating that "design interfaces were found to be lacking in that 'the process for controlling

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e. DC.1-5: No documented program was found for assuring correct application of seismic response spectra. (Petition, p. 6.)

It is DPC's position that adequate procedures are in place to control the use of seismic response spectra. Seismic response spectra and building displacements used for design or qualification of safety related structures, systems and components are controlled by issuing them in a specification. Included in this are general instructions for the use of these spectra, including specification explanations of how to obtain OBE or SSE spectra where only one is supplied and information on the areas of buildings for which spectra are applicable. Specific instructions on methods of seismic analysis or testing and damping values are not included because they vary depending on the type of structure or component. This information is included in design specifications or procedures for specific structures, systems or components.

This finding indicates a concern related to documented procedures but does not find any indication of associated design deficiencies. The response to this finding was developed by an interdivisional committee and reviewed by all Chief Engineers. Neither the response to this finding nor an earlier internal seismic review conducted by Design Engineering, identified any indication of generic design deficiencies.

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6 (continued)

design input documents does not require timely updating of system descriptions.'"

Again, on pages 8 and 9, GAP cites additional statements and SIE findings (DC. 3-3 and DC. 4-3, which are quoted in the Petition) which relate to the updating of system descriptions. DPC's response to DC. 1-4, above, is also applicable to all of these additional findings.

13-56

Response spectra specifications are distributed by procedures controlled by the QA program. Revisions to response spectra specifications have been generated as needed; but, there have been no significant revisions to spectra for the station. This further minimizes the possibility that spectra were used incorrectly. It is Duke's position that adequate procedures are and have been in place to control the use of seismic response spectra.

f. DC.3-1: Design records are not always being filed in a timely manner. Waiver form originals on file in a manual had not been transmitted to General Services for Corporate filing. (Petition, p. 8.)

The drawing waiver form referred to in this finding documents which Divisions have waived the requirement to inspect a drawing. The purpose of the inspection by other Divisions is to assure that all design interface considerations are included. The waiver of this inspection indicates that the interfacing departments have determined that there are no design interfaces to be considered on the waived drawing. The quality of the plant's design would not have been impacted in any way had this isolated deficiency gone undetected. If no copies of the particular drawing waiver could have been located, the only consequence would have been unnecessary inspection signature(s) on that category of drawings.

Nevertheless, despite the fact that there are no safety implications associated with this finding, DPC took appropriate measures to insure that this type of incident would not recur. The QA Procedure addressing drawing waiver forms was revised to clearly define responsibility for filing the drawing waiver forms.

g. DC.3-2: Changes to Design drawings do not receive the same degree of documented review as the original issue. Originals are documented by designer, drawer, checker and

approver. Revisions are documented by checker and approver. (Petition, p. 8.)

This finding emphasizes that original issue drawings require the signatures of the designer, drawer, checker, and approver, while revisions to design drawings only require the signatures of a checker (verifier) and an approver. The important point here, however, is that all drawings require a design verification (checker) and approval. Accordingly, the quality of design is not brought into question by this finding. Although DPC's original response to the SIE indicated no corrective action would be taken, Design Engineering has recently decided to add a space for the originator of drawing revisions to sign, in order to provide more complete documentation throughout.

h. DC.3-3: Design documents relating to the design of the RHR System are in disagreement creating a potential for error in the design. This is also true for the AFW system. (Petition, p. 8.)

This finding is addressed in response to d above. See note 3, supra.

i. DC.3-4: Calculations are not being maintained in a controlled manner that support[s] issued Design documents. (Petition, p. 8.)

Finding DC. 3-4 pertains to certain Mechanical Group Department calculations not being in the required documentation format. Specifically, this finding dealt with the lack of documentation in the calculation files for the Auxiliary Feedwater System.

Although the supporting calculation for the Auxiliary Feedwater System was not in QA format in the document file, it had been prepared and was in the sponsor system engineer's file. This calculation had verified that the Auxiliary Feedwater System met its design basis.

Due to the evolving nature of mechanical systems designs, it is impractical to document portions of a system design as it is developed. Instead, it is prudent to check periodically to see that the total system meets its design basis. Once the design is firm, equipment data, piping layout, and other functional design requirements are verified in a final system verification calculation prior to reactor fuel load, as required by ANSI N45.2-11.

DPC determined that the only corrective action needed was to formalize the final system verification procedure and to schedule completion of final design calculations for all systems. Final system verification is sufficient to assure that no safety concerns exist.

j. Five additional SIE observations. (Petition, p. 7)

On page 7 of its Petition, GAP cites excerpts from five observations found in the SIE to support its assertion that there are "design control deficiencies" at Catawba and that "there can be no question that work at Catawba has largely proceeded on the basis of informal drawings and procedures instead of design changes approved by the project engineers." Of these five observations, four are related to the findings discussed above -- specifically, observation 1 relates to DC. 1-1, observations 2 and 3 relate to DC. 1-2; and observation 4 relates to DC. 1-3. Thus, the DPC responses set forth above apply to these observations as well as to the related findings.

The only observation which has not already been discussed and resolved above is item F, which states that ". . .no program requirement for conducting constructibility, maintainability, or operability reviews was found to exist. . . ." This observation relates to SIE finding DC. 4-2, which is as follows:

DC.4-2: No documented program was identified for determining and assuring review for constructibility, maintainability and operability is conducted. Reviews are performed where a need is identified.

DPC reviewed this finding and determined that no corrective action was necessary because adequate reviews for constructibility, maintainability and operability have been conducted during the design and construction phases of Catawba Nuclear Station. There are three primary programs for such review: 1) Scale Model Reviews, 2) Composite Drawing Reviews, and 3) Piping Design Criteria Reviews.

All three of these programs are well documented and there is participation in the reviews by all affected Company organizations. The following is a synopsis of each program:

(1) Scale Model Reviews - For Catawba Nuclear Station, a scale model was constructed (3/8" = 1 foot). This model consisted of 33 model tables and included the plant structure, mechanical and electrical equipment, piping, HVAC and cable tray.

As the model was being constructed, periodic checkouts were held to review each area of the plant. Representatives from DPC's Construction Department, Nuclear Production Department and Design Engineering Department attended these reviews. All aspects of the plant's design were reviewed, including constructibility, maintainability and operability. Any problems detected by the reviews were documented and coordinated with appropriate parties for resolution. Each model table is scheduled to be reviewed four times during the design and construction phases of the project. To date, three reviews for each area have been completed.

In addition, special enlarged models of congested areas were constructed when required. These models usually included all designed and field located components (including instrumentation components, cables, tubing, support/restraints, insulation, etc). The four-tier review process for these models i the same as noted above.

(2) Composite Drawing Reviews - The composite drawings for Catawba Nuclear Station consist of a series of orthographic drawings for the reactor, auxiliary, turbine and service buildings. Each composite drawing shows all the disciplines (structure, equipment, HVAC, pipe, cabletray and support restraints) within a given area. Also, the composite drawings depict required maintenance access space, equipment maintenance space or other special space requirements.

As design work is released, a review is done using the composite drawings. During this review, the design is checked for maintainability and constructibility. Any problems detected are documented and coordinated with the appropriate parties for resolution.

The above program for reviewing composite drawings has been particularly beneficial in the area of support restraints. In congested areas of the plant, it is very difficult to design the support restraints due to the space limitations. On Unit 1, each support restraint design is located and verified on the composite drawing. On Unit 2, each support/restraint design is located, verified and the required space envelope is shown on the composite drawing. All of this is done prior to release of the

support restraint drawings to Construction and helps to prevent many field problems.

(3) Piping Design Criteria Reviews - The Piping Design Criteria is a recent development (late 1981) in DPC's piping design process. There are specific criteria on Constructibility (PDC-020); Maintenance Considerations (PDC-100); and Operability (System and Equipment Considerations [030] and In-Service Inspections [070]). When all of the criteria were developed, constructibility, maintainability and operability were considered and incorporated into each criterion. Also, affected groups within the Company reviewed and approved the criteria which applied to their areas.

Since the Piping Design Criteria is a recent development, these criteria were not utilized on the initial design efforts for Catawba. However, the criteria are now being applied on new designs and design revisions where appropriate. Prior to the development of the criteria, good engineering judgment was utilized in the design process. Now, the Piping Design Criteria provides DPC with a documented design process which produces a consistent approach to piping design and problem resolution. It is our opinion that the Piping Design criteria assure that constructibility, maintainability and operability are considered in the design process and that an appropriate review is performed to verify compliance with the criteria.

In summary, DPC believes that the three programs outlined above assure appropriate review for constructibility, maintainability and operability.

These programs allow for input from affected organizations within the Company at various stages of the project and also allow for continuous review of the design as revisions are made.

2. McAfee allegations

On page 9 of its Petition, GAP refers to the deposition of Ron McAfee as supporting evidence of design and construction weaknesses. Mr. McAfee's concern was that drawings were revised after inspection in order to conceal a "construction foul up" (See McAfee deposition, Tr. 41), and that this "totally backward approach to design control" is evidence of DPC's deficient approach in constructing Catawba. These assertions are misleading.

There was a period of time at Catawba (prior to 1980) when inspectors had difficulty in understanding design drawings. This difficulty was the result of limited experience by the Catawba inspectors in interpreting design drawings and the lack of a tolerance on some designs. When tolerances were not specified and craft varied from the drawing due to field conditions, this caused inspectors to ask numerous questions which led to many NCIs. In each of these cases, the actual installed condition was analyzed and approved. Because of the numerous questions and NCIs in this area, Design Engineering issued a tolerance specification to define allowable variations from design drawings. In addition, Design Engineering reviewed all electrical hanger drawings to identify potential conditions that could lead to inspector questions. Both the craft and the inspectors were trained in the proper interpretation of the tolerance specification and design drawings. In addition, all electrical hangers

were reinspected to these requirements. The NRC reviewed the action taken, found it to be complete and sufficient, and closed the item on 8-2-80 (NRC Inspection Report 50-413/80-23).

DPC submits that, to the extent they were valid in the first place, Mr. McAfee's concerns have been more than adequately addressed by these corrective actions. GAP fails to acknowledge any of these actions in its Petition, instead confining itself to unsupported insinuations about the "quick and dirty approach used by DPC management to build Catawba." (Petition, p. 10.)

3. Variation Notices

GAP asserts on page 10 of its Petition that "a review of all the Design Drawing and Specification Variation Procedures used for design control affirms the worst fears of Catawba's critics." The basis for this unwarranted assertion is unclear. GAP makes much of the fact that in, September, 1976 QA Procedure R-3 was revised to change responsibility for control of Variation Notices from Project Engineering to Project Manager. However, there was no substance whatsoever to this change. The wording in the previous revision stated that "the Project Engineer, Senior Construction Engineer, or someone of higher authority within the project management organization" had responsibility for approving VNs. Since all of these individuals reported to the Project Manager, the wording change was made merely to simplify the procedure.

GAP further alleges that "prior to that transfer" no meaningful QA/QC review of design changes (VNs) occurred until May 1, 1974. May 1, 1974

corresponds to the formation of the QA Department as a separate department. Prior to this time, therefore, there was no QA review of design changes since the QC assignments were made by the responsible field engineer. This does not mean, however, that design changes were not reviewed before 5/1/74. The review was performed by another department. In addition, safety related construction on Catawba did not begin until after May, 1974. Therefore, no VNs were issued on Catawba before May 1, 1974.

GAP goes on to assert that design control procedures at Catawba "remained inadequate throughout the decade" (Petition, p. 10). In support of this serious allegation, it cites Revision 7 to QA procedure R-3 and suggests there is something "inadequate" about restricting use of Variation Notices (VNs) to those cases where their use is essential to maintain work in progress or work soon to begin. This restriction was placed in the procedure to preclude VNs from remaining outstanding for long periods of time. In cases where work is not imminent, drawings are revised prior to the beginning of work.

In the same vein, GAP refers to Revision 8 of QA Procedure R-3 (GAP Attachment #6) and implies that there is something wrong with construction and design implementing a field change prior to formal revision of the approved design document. The Variation Notice is used by DPC to get design approval of field changes prior to actual drawing revision. This process is controlled in that the Variation Notice is held open until the drawing is revised and verification is made that the final approved design reflects the as-built condition of the plant.

On page 11, GAP references Revision 13 to QA Procedure R-3 (dated 1/11/82) as Duke's first attempt at addressing reportability of Design Nonconformances. This is inaccurate. In fact, Duke had in place in August 1975, QA procedures to address reportability in accordance with 10 CFR 50.55(e). These procedures applied to all items during the design and construction of Catawba which were reportable to the NRC in accordance with 10 CFR 50.55(e). By January 1978 our QA procedures also fully incorporated the reporting requirements of 10 CFR 21. These reporting procedures required all persons detecting an item or event which they believed to be reportable to bring their concern to the attention of management. This requirement was posted. The procedure referenced by GAP merely adds documentation of the previous requirement. GAP further contends that this improvement was short-lived when Rev. 17 was issued, exempting certain VNs from review as a design nonconformance. This too is misleading. The VNs that were exempted were deemed to be minor in nature and not potential design nonconformances.

GAP concludes Section A of its Petition by alleging that "after a review of the design procedures, the INPO findings, and the experiences of Catawba workers who have talked to GAP," there can be "no reasonable assurance" that the plant is built as designed, and that design changes satisfy 10 CFR Part 50, Appendix B, Criterion III. (Petition, p. 12.) As DPC's response to the various allegations made in this section has made clear, GAP's assertions are totally without foundation. They appear to be based upon the petitioner's incomplete and, in some cases, incorrect understanding of the SIE findings and their implications and of DPC's QA procedures. This irresponsible approach, coupled with GAP's vague and unsubstantiated references to "the experiences of Catawba workers," and its gratuitous and unsupported comparison of Catawba with other

nuclear plants with which GAP has been involved, further undermine the credibility of this Petition.

Contrary to the allegations set forth in Section A, DPC maintains that we have a comprehensive and well-developed program which ensures that the as-built condition of Catawba agrees with the final approved designs.

B. "Failure to Maintain an Adequate Quality Assurance Program to Identify and Correct Construction Deficiencies."

On page 13, GAP begins a series of unsubstantiated allegations regarding the Quality Assurance program at Catawba, asserting that the "premise" of QA has been "fix it first, fill in the paperwork later," and that "violations of regulatory requirements were common." These claims are unsupported by any evidence.

First, GAP refers to "continued low quality assurance/quality control ratings by the NRC" as evidence that Catawba has not been constructed in accordance with Appendix B, citing the 1981 SALP report and a draft of the 1983 SALP report. In considering the 1981 SALP report, it should be recalled that the time period covered by this report coincided with a period of extremely heavy construction activity at Catawba. We believe this accounts for a greater number of construction deficiencies and violations than may have been written at other sites during this period, and that this was a factor in our below average rating.

In DPC's view, this rating was not justified. In any event, a "Below Average" rating does not in itself, indicate systematic or significant deficiencies. In explaining the rating system in the 1981 report, the NRC stated: "[a] rating of

below average does not mean that a facility was unsafe or that its operation or construction should be stopped."

As to the 1983 SALP Report, GAP's remarks are incorrect. The final 1983 SALP report gave Quality Assurance at Catawba a "Category 1," rather than a Category 2, rating.[7]

GAP also refers to "a series of critical reports by consultants." (Petition, p.13.) That no further attempt is made to substantiate this damaging reference is perhaps not surprising, since it lacks any basis in fact.

The gist of GAP's concern about DPC's QA program (described by GAP as the "fatal flaw" in the program) is that the QA program "is not, and never has been, independent of construction."

By the time safety-related construction of Catawba began in November, 1975, DPC had (in May, 1974) established a separate Quality Assurance Department, which reported independent of Construction to the Senior Vice-President Engineering and Construction. At that time, it was decided that QC inspectors should remain in the Construction Department for administrative purposes; however, they were under full functional control of the QA Department. That is, the Construction Department was responsible for timekeeping, facilities,

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[7] "Category 1" is defined as:

> Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used such that a high level of performance with respect to operational safety or construction is being achieved.

scheduling, payroll, etc., while the QA Department was responsible for training and certification of inspectors, providing inspection procedures, and evaluating and approving inspection records. On quality matters, the Quality Control personnel were under the direct control of the Quality Assurance Department.

On page fifteen, GAP states that DPC President and Chairman of the Board, William S. Lee, "neither respected nor implemented the NRC instructions to split up the QA/QC function from construction and engineering," adding that this was in "blatant disregard" of the laws governing commercial nuclear plants. This accusation is unfounded, as evidenced by NRC approval of Amendment 2 of the Duke Power Quality Assurance Topical Report on April 17, 1975. In its letter of approval the NRC stated:

> Based on our review and evaluation of Duke-1, we conclude that:
>
> 1. The organizations and persons performing QA functions within DPC have the required independence and authority to effectively carry out the QA Program without reservation or undue influence from those directly responsible for costs and schedules, and
>
> 2. The DPC QA Program contains the necessary requirements, procedures, and controls to demonstrate that quality-related activities will be conducted in accordance with Appendix B to 10 CFR Part 50.

On page 16, GAP states that Mr. Lee "chose administrative convenience over regulatory requirements for nine years," and further contends that "the original organizational structure of DPC [presumably GAP is referring to the QA Department] continued without accountability until 1981 . . . ." In fact, Duke was in compliance with applicable NRC regulatory requirements for this entire period. Administrative convenience was a consideration only within the

constraints of meeting the regulatory requirements. This point is underscored by the findings of the various Licensing Boards and Appeal Boards which reviewed and approved the QA structure which GAP calls into question. (See, i.e. Duke Power Company (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-143, 6 AEC 623, 625 (1973.))

GAP next cites the concerns expressed by welding inspectors as evidence of pressure from construction. (Petition, p. 16) The welding inspectors' concerns were thoroughly investigated by DPC and were found to stem from poor channels of communication, primarily related to the lack of adequate feedback to inspectors when work rejected by them was later evaluated as being acceptable. In assessing these concerns it must be recalled that the job of QA inspectors is to report deviations from specified requirements. The resolution of reported deviations is the responsibility of others within the organization. The inspectors' natural reaction to this lack of feedback was to interpret it as lack of support and "giving in" to construction pressure. Our evaluation revealed no unsafe conditions.[8] However, we did strengthen our communication channels and upgrade some procedures in response to their concerns.

On page 17, GAP states "even outside consultants failed to convince DPC management of the failure of its QA Program." This assertion is misleading

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[8] During the Catawba operating license evidentiary hearing held in the fall of 1983, testimony was presented by every welding inspector who had raised concerns. (The Board ruled that much of the testimony was cumulative and thus, admitted into evidence the testimony of approximately one-half of the welding inspectors.) Each welding inspector concluded that, despite whatever problems he might have experienced, he did his work correctly and that based on the work he performed, the plant was safe. Further, no welding inspector stated that construction pressures affected his ability to do his job.

since no outside consultant, including Management Analysis Company (MAC), has ever concluded that DPC's QA Program had failed.[9]

GAP further criticizes MAC for dividing the inspectors' concerns into technical and nontechnical areas, and for failing to address the "nontechnical programmatic flaws" (Petition, p.17). In fact, the reason for separating the concerns into technical and nontechnical areas was to enable technical experts to address the technical concerns and to assign the nontechnical concerns to experts in the field of personnel relations. Contrary to GAP's claims, this separation of concerns did not leave the inspectors "no choice but filing their massive complaints" (Petition, p. 17). The labeling of the concerns as technical or nontechnical occurred after the concerns were filed and was part of the process of evaluating the concerns.

In addition, GAP's assertion (p. 17) that "because the welders (SIC) documented their specific concerns it is only their work that the public can be assured" is adequate, lacks any basis. We point out again that no unsafe conditions were found as a result of the welding inspector concerns. Since no deficiencies were found that would have caused unsafe operations, DPC concluded that there had been no QA program breakdown.[10] In addition, interviews with inspectors other than welding inspectors revealed no concerns about the safety or quality of the plant. Furthermore, all of the program enhancements which

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[9] GAP fails to identify the "outside consultants" it is referring to.

[10] DPC notes that GAP has attempted to use the SIE as evidence of a systematic breakdown in QA. However, as noted in this response, neither the SIE itself nor the testimony of the SIE panel members support this allegation.

allow inspectors to voice concerns are in place throughout the various inspection groups.

GAP further claims that the NRC Atomic Safety and Licensing Board has inappropriately "narrowed the scope of the claims to allow intervenors to litigate only the welding concerns" and ignored the fact that the alleged QA breakdown is "site wide" and "programmatic." This claim is similarly unsupported by any evidence other than anonymous letters cited by GAP and a vague reference to statements made by "other QC inspectors."

GAP concludes Section B by referring to the Self-Initiated Evaluation (called INPO by GAP), pages 3-97 and Section D.3, which, it asserts, address the "lack of independence." We found no such statement in our review of the SIE. In fact, our conclusion based on our own review of the SIE findings, was that the SIE demonstrated seven strengths, two of which are noted in the SIE summary as:

> "Quality Assurance and Quality Control functions were performed adequately and independently to support and control the quality of the facility." (SIE at p. 2a.)
>
> and,
>
> "A strong corporate commitment to design and construct a safe facility." Id.

We submit that the SIE, when viewed in its proper perspective, demonstrates DPC's commitment to quality work and self-improvement.

C. "Failure to Maintain Adequate Controls to Process and Respond to Non-Conforming Conditions"

GAP maintains that "the breakdown of the NCI reporting system at Catawba illustrates the breakdown of the entire QA program" (Petition, p. 18). In

particular, GAP attacks DPC for handling deficiencies by means other than an NCI. Before responding to each of GAP's specific concerns, a general description of DPC's methods of identifying and correcting inspection discrepancies is set forth below:

The Quality Assurance Program in use at Duke Power Company during construction at Catawba provides several means of correcting discrepancies that are discovered by inspectors. There are four basic methods available, three of which do not involve writing an NCI.

- The first, which is sometimes referred to in some of the procedures as the "hold point" method, consists of an inspector making the craft aware of a deficiency, the deficiency being corrected to the satisfaction of the inspector, and the inspector signing off the item. In this method, the item is not signed off until all necessary action has been completed, and the inspector is satisfied. This "hold point" method is common, and has been in use at Catawba throughout construction.

- The second is the "process control" method, whereby the inspection report itself provides the means to document a repair. This method is used primarily in welding where, for example, a final visual inspection might detect defects which would be recorded on the inspection form. The procedure for the inspection and for making the weld would provide instructions on how to correct that item (or that defect) and then provide instructions for reinspection. All of this would be documented on the Process Control Form, which serves both as a documentation of the work and the inspection of that work.

- The third method is a Deficiency Report Form. There have been several different procedures available to inspectors under this method. The procedure currently in use is the Discrepancy Report Form, commonly referred to as an R-2A. By this method, the inspector would document the problem he identified, and that would then be sent to the Construction Technical group at the site. That group would determine necessary corrective action. If such action involved the craft redoing work, it would go to the craft to be done. The form would then be routed back to the inspector who would reinspect the work and, if satisfied, sign off on it.

- Inspectors may use QA Procedure Q-1, "Control of Nonconforming Items," and its corresponding Form Q-1A, "Nonconforming Item Report," commonly referred to as an NCI. This method is used when the discrepancy is not handled by one of the methods discussed above.

Our response to specific allegations by GAP follows:

1. DPC Policy to Circumvent Nonconforming Items (NCI) (Petition, pp. 18-20)

In support of this allegation, GAP first contends that the Planning and Facilities Engineering staff, rather than QA/QC, began the NCI process. However, GAP conveniently overlooked paragraph 4.1 of Revision 5, which describes the responsibilities of inspectors and engineers in initiating NCIs, and tagging the nonconformed item.[11] The sole

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[11] Paragraph 4.1 of revision 5 states:

(continued)

responsibility of the Planning and Facilities Engineering staff was one of statusing NCIs.

More importantly, GAP further contends that QA was merely a "glorified file clerk for the engineering staff" when it came to the resolution of NCIs. Petitioner references paragraph 4.4 of Rev. 5 to QAP Q-1, again overlooking paragraph 4.3 which clearly requires QA Department approval of resolutions to NCIs. "It shall also be approved and inspection requirements assigned by the Quality Assurance Department." This approval is performed by an engineer or an individual with a high degree of technical expertise designated by the Project QA Manager.
In addition, it can clearly be seen on Form Q-1A, Rev. 6, block 8 that QA Approval is required. (GAP Attachment 2.)

GAP's contention that the status report described in paragraph 4.5 (QAP Q-1, Rev. 5) is a "trending list" is inaccurate. GAP apparently is trying to argue that the NCI status log was a substitute for an NCI trend

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[11] (continued)

Any inspector or engineer discovering a nonconforming item as defined in paragraph Q-2 shall initiate Form Q-1A, Nonconforming Item Report.

The report shall then be reviewed for completeness and correctness by the responsible Senior Engineer or his designated representative. He shall sign the report and submit it to the Planning and Facilities Engineer Staff for processing. Nonconforming items shall be controlled by tagging, marking, or other means of identification where physical segregation is not practical, although physical segregation and marking are preferred. The means of identification must be stated on Form Q-1A. The identification of a nonconforming item must be maintained until a resolution to the nonconformance has been approved on Form Q-1A. If tags are used to identify the nonconformance, Form Q-1B shall be used.

analysis. NCIs have been trended by QA for conditions adverse to quality (not schedule) since 1974.

GAP further states that "if QA/QC had ever been given authority over the construction NCI files, there might be a possibility that documentation could be retrieved." This statement is misleading, in that although Construction does maintain the status log and initial copy of the NCI, they are held accountable by DPC's QA Program for the completeness of the log and for accounting for each NCI. This activity is subject to QA audit. Final copies of all NCI's are kept in the QA vault.

2. In Process Inspections (Petition, pp. 20-23)

GAP contends that Revision 9 to QA Procedure Q-1, paragraph 4.1 (GAP Attachment 14), violated Criterion X of Appendix B when it was in use during 1976-1978, because the procedure directs inspections to be suspended on nonconforming activities. This is incorrect. Paragraph 4.1 requires the activity (i.e., the work) to be stopped, not the inspection of the work. The parallel which GAP attempts to draw between QA procedures at Midland found to be improper and this Catawba procedure is, therefore, entirely inappropriate.

GAP further contends (p. 21) that QA/QC inspectors had no authority to write NCIs without first getting approval from the Senior Engineer. This is not the case. Inspectors could initiate NCIs both before and after Revision 12. The reference GAP cites to support its argument (Sec. 5.1.13 of QAP Q-1, Rev. 12) does not remove the authority of inspectors to write

NCIs. Rather, it gives authority to the Senior Engineer to determine the validity of a proposed NCI.

GAP also asserts on page 21 that DPC "put the screws on" Catawba management to eliminate "the NCI problem." This statement constitutes a gross mischaracterization of what intentions with respect to NCIs were at this time.

The following is a statement of our policy on this issue prior to 1981:

When an inspector determined that a deficiency could not or should not be handled by a method other than the nonconforming method, he would obtain a nonconforming item form (form Q-1A) and complete the top portion of the form. If there was a question in the inspector's mind as to whether an item was in fact nonconforming, he might talk with his supervision to make a determination. If this determination was that the item was not, in fact, nonconforming, or that another method would be appropriate to handle the item, then the form (Q-1A) would not be completed or would be discarded. If the form was completed, the inspector would describe the item and its condition along with other information, such as location, on the top part of the form. The inspector would then sign the form as originator. A review of the form by the inspector's first line supervisor was sometimes conducted at this point, but was not required.

Next, the NCI procedure required review by the Senior Engineer. There was no requirement to have a serial number assigned to the NCI form at this point. However, usually a number had been obtained by the originator at this point.

An inspector might not be sure the item was nonconforming and would therefore intentionally not have a serial number assigned prior to this review. This was not the normal case, and the vast majority of NCIs submitted to the Senior Engineer for review already had a serial number assigned to them. The assignment of a serial number was purely a clerical function and in no way involved a review of the NCI for validity. A serial number was assigned by the facilities group in construction simply because they maintained the NCI log book.

The typical situation was for the inspector to give the Senior Engineer a completed NCI form that was signed and had a serial number. He would review the NCI for accuracy, completeness, and validity, and might request that additional information be added to the form by the originator. This review was to determine:

- whether the item was clearly identified;
- whether the problem had been clearly described;
- what requirement has been violated and whether it had been identified;
- whether all the available information had been given such that the party assigned resolution would have all they would need to understand the deficiency;
- whether the form was legible; and
- whether there was another, more appropriate way to handle the item

If the NCI form needed work in clarity or legibility, or more information was needed, the Senior Engineer would explain what was needed to the originator and

Blank

direct him to obtain the information, or clarify it, and then resubmit the form. If the Senior Engineer had questions about its validity or thought it was invalid, he would discuss it with the originator. This discussion might also include the inspector's supervisor. If the Senior Engineer determined that the NCI was not valid, he would explain this to the originator and handle it in one of two ways, depending on whether the form had a serial number on it. If it had a serial number, he would either explain on the form why it was invalid or go ahead and approve it, and ask the QA group to assign it to him for resolution, in which case he would resolve the NCI by stating why it was invalid. In both cases the form would be forwarded to QA. If it did not have a serial number, the Senior Engineer would return it to the originator explaining why it was not a valid NCI. If the inspector expressed disagreement about the validity of the NCI, the Senior Engineer would usually sign it. In some cases he would direct that the discrepancy be handled by another method, such as a Corrective Action Notice (R-2A) or by informing the craft to correct it.

At least 17,000 NCI's have been originated at Catawba. To the best of the recollection of the then Senior Engineer, only a few per year, perhaps as many as 20, would be invalidated during this kind of review. Most of these situations arose because the inspector had a question as to whether the discrepancy should be an NCI. In the vast majority of cases, the Senior Engineer concluded that these discrepancies would probably be best handled as an NCI and would sign the NCI form.

The NCI Procedure in effect at this time stated that if an NCI was determined to be invalid, the reason should be stated in the description block. We

interpreted this to mean that this provision applied to NCIs that had been logged and serialized. Also, since the NCI procedure was used for nonsafety related items, many times an NCI was determined to be invalid because it was not on a safety related system, and the same QA requirements did not apply. Some of the deficiencies identified by inspectors would not be valid nonconformances on nonsafety related systems.

After review by the Senior Engineer the NCI was sent to the QA group for assignment of resolution responsibility. In June 1978, a block was added to the NCI form to include a QA review of the origination also. This change was inconsequential because the form was always routed to QA after Senior Engineer review.

The QA group would determine who would be assigned to resolve the NCI and route it to them through the facilities group so the log could reflect the assignment. The resolution could be assigned to either the Design Engineering, Construction, or QA Departments, depending on what requirement was violated and whether or not Engineering evaluation was required.

The resolution or disposition would be determined and added to the form and approved by a competent individual for technical content. This approval was not required for resolutions developed by QA because it would get the review automatically. The QA group would then review and approve the resolution and indicate any action to be taken.

In summary, there was no attempt to prevent NCIs from being written. There was an effort to make sure the NCIs were clearly and completely written and that

NCI's were not being used when there were other programmatic ways to correct the discrepancy. Because of this emphasis some inspectors may have felt they were being unduly burdened in performing their job; however, the intent of DPC was to ensure the QA program was being properly implemented.

SAP states on page 22 that the first requirement for a 10 CFR 50 Appendix B Criterion XVI evaluation was with Rev. 17 to QA Procedure Q-1. Actually, in Revision 16 we first began using the term "Criterion XVI evaluation. Throughout the construction of Catwaba, Duke had in place procedures designed to meet the requirements of Appendix B, Criterion XVI. It became obvious in February 1981 as a result of NRC I&E findings presented in I&E Report 413/81 - 02 that a more formal structure to our NCI procedures and forms was necessary. As a result of NRC violations, DPC conducted a thorough audit of approximately 11,000 NCIs in 1981 with the following results:

- Technically, the safety of components and systems was being assured.

- Editorially, our procedures and forms did not present an adequate description necessary for audits and long-term use as a QA record.

Therefore, procedure Q-1 was changed in April 1981 and January 1982 to address these inadequacies. The action taken was reviewed by the NRC and closed in IE Reports 50-413, 414/81-18 (8/28/81), 50-413, 414/81-27 (12/10/81), and 50-413, 414/82-03 (2/19/82).

3. Inferior Substitutes for Nonconforming Item Reports (Petition, pp. 23-25)

GAP contends that R-2As are used by DPC as inferior substitutes for NCIs. This is inaccurate. R-2As are not used as substitutes, in any degree, for NCIs. Rather, R-2As are simply a mechanism for the inspector to identify discrepancies so that they will be evaluated and appropriate action taken. In that R-2As do identify problems, a part of the evaluation is to assure that all R-2As are evaluated for possible elevation to NCI status.

CAP goes on to assert that R-2As are "deficient from NCIs in at least seven respects." (Petition, p. 23.) Our point-by-point response to this assertion follows.

a. ASSERTION: NCIs identify the cause of the problem

RESPONSE:

10 CFR 50, Appendix B, Criterion XVI requires that for "Significant" conditions adverse to quality the cause be determined. The individual problems identified on R-2As that are "Significant" will be elevated to an NCI. The repetitive problems which are not significant in themselves but which demonstrate an unfavorable trend if they recur will be identified by R-2A trend analysis. The cause will be determined and appropriate action will be taken based on the trend analysis. Accordingly, this assertion is misleading.

b. ASSERTION: NCIs cannot be closed with an informal, undocumented design change.

RESPONSE:

R-2As cannot be closed with an informal, undocumented design change, either. If the item is not in accordance with design requirements, it must be either reworked and signed off or elevated to an NCI for Design evaluation and action. If Design evaluation determines the as-built condition is acceptable, drawings and calculations are revised to reflect the as-built condition.

c. ASSERTION: NCIs give inspectors the ability to stop work on a nonconforming item that needs to be isolated.

RESPONSE:

Although R-2As do not always stop the work at the time they are written, the specific discrepancy is identified and controlled and that item will not be signed off as complete until all necessary rework, justifications, and reinspections are completed, signed, and documented. Accordingly, the work is stopped at the appropriate time if all these steps are not complete. However, if an inspector thinks work should be stopped immediately, he can initiate a Work Stoppage notice.

c. ASSERTION: NCIs are sent to the NCI (SIC) for review.

RESPONSE:

We presume that GAP intended to say "NRC" for "NCI". Based on this assumption our answer is as follows: Although each R-2A is not sent to the NRC, all R-2As are available for review by the NRC.

e. ASSERTION: NCIs are trended in QA.

RESPONSE:

R-2As are trended by Construction. Construction is in the best position to trend R-2As since R-2As are primarily "rework" type discrepancies. As such, the Construction Department is closest to the work and, therefore, can determine the root cause and take corrective action more directly. Moreover, R-2A trend reports are required by QA procedure to be sent to QA and are reviewed by QA.

f. ASSERTION: NCIs have control numbers (once issued).

RESPONSE:

R-2As also have control numbers. See QA Procedure R-2, Rev. 9, paragraph 4.1 (Duke Attachment 3).

g. ASSERTION: NCIs require written resolution.

RESPONSE:

R-2As also require written resolution. See QA Procedure R-2, Rev. 9, paragraph 4.2 (Duke Attachment 3).

In addition to the foregoing seven points, GAP invokes the SIE (referred to by GAP as the INPO report) as further evidence that R-2As are "inferior substitutes" for NCIs. (Petition, p. 24.) Our responses to the SIE observations cited by Petitioner are set forth below:

The [SIE] reports the following about the R-2As:

The performance of Construction corrective actions was review. Responsibility for trend analysis of R-2As (inspection discrepancy reports) recently was changed from QA to Construction. This review indicated the following areas of weakness:

a. No trend analysis has been performed during the period 6-1-82 through 8-23-82. (Petition, p. 24)

Responsibility for trending R-2As (corrective action) was transferred to the Construction Department from Quality Assurance just before the SIE. After the transfer, the method of performing the trend analysis took construction a few months to develop. It should be noted that subsequent trend analyses did include R-2As written during this period. Since the SIE, the Administrative Methods Section has been established at the Catawba site. One of this section's responsibilities is to trend R-2As. The trending is performed monthly in accordance with Construction Department Procedure CDA-9. Results of this review are forwarded to appropriate management personnel for their analysis and possible action.

In addressing trending analyses, however, it should be understood that this is simply a management tool and does not replace the normal and required QA inspections of each activity being trended. In short, even if trending analysis was not conducted, the required QA inspections of each appropriate activity would still take place to provide assurance of quality construction.

b. Construction has not performed any trend analysis of QA surveillance reports. (Petition, p. 24)

Any deficiencies found during QA surveillances are required to be reported in accordance with QAP R-2 or Q-1. R-2As and Q-1As are trended for conditions adverse to quality. Therefore, although the surveillance reports are not trended, significant deficiencies identified on surveillance reports are trended.

c. Construction has not performed any trend analysis of nonconforming item reports. (Petition, p. 24)

QA performs trend analysis of NCIs and forwards them to Construction for corrective action.

d. Statement of action on R-2A #5677 does not address all areas of concern. Piping system was pressurized prior to release by hydro group. R-2A did not address procedure violation nor (personnel) safety implications. (Petition, p. 24)

R-2A 5677 documents pressurization of pipe prior to release for testing to the systems group in construction. It should be noted that the type of activity is routinely performed to check for leaks in joints prior to turnover. However, it does not replace the hydrostatic tests of required safety systems. Accordingly, such activity does not constitute a violation of procedures. In any event, review shows the system pressurized to be a non-nuclear safety related system. Testing of this nonsafety related piping is the responsibility of the construction department. The noncritical QA review of this R-2A is attributable in part to the nonsafety related nature of the piping involved.

e. Action required on R-2A #M5350, although cleared by QA, has not been completed. (Petition, p. 24)

R-2A M5350 described the observation by QC during a hydrostatic test that two instrument taps, while correctly installed per the design isometric, were not located as shown the design flow diagram. This was a case of differing design documents. The taps were installed per the installation drawing. The resolution was to correct the flow diagram to show the taps located as called for by the design drawing. The QC inspector who initialed the reinspection block was aware that there was action underway to revise the flow diagram and correct the discrepancy between the two drawings. In this case, the R-2A should not have been approved by QA prior to receiving the revised flow

43-58

diagram. We have clarified procedure R-2 on this point. Since the taps were installed and inspected as designed, there is no safety impact from the lack of critical QA review on this R-2A.

f. Deficiencies were noted in Forms R-2A (Inspection Discrepancies) where the Quality Assurance group:

A. Accepted the statement of action required when the action did not address the root cause of the problem or

B. Approved clearance of the R-2A when corrective action had not yet been taken. (Petition, p. 24)

This statement from the SIE report is based on items (d) and (e) above relating to R-2As #5677 and #M5350. The specifics of each case are discussed above in our responses to items d and e. The lack of critical evaluation by QA to these discrepancy reports was not significant.

4. Voiding the Nonconforming Item Report (Petition, pp. 2-5)

GAP cites the testimony of C R Baldwin to support its claim that " a particularly ominous method of cutting down NCIs at Catawba has been "voiding" or "verbally overriding" the NCI by management, and, in particular, that there were "numerous occasions" when an inspector did not write an NCI after talking to his supervisor. In summary, there are three conditions under which "voiding" of NCIs occurred. These are as follows:

a. There was another preferred procedural method available for getting the deficiency corrected. These methods were built into the DPC QA Program to keep from flooding the NCI process with insignificant items. In this case, the inspector would be advised on the correct way to proceed.

b. The deficiency was really a "question" of acceptability. The supervisor would discuss the situation with the inspector and attempt to answer the question. Once the question had been resolved, the NCI was no longer necessary.

c. The proposed NCI was not valid. The supervisor would try to explain his decision to the inspector. If the NCI had a serial number, it would be processed in accordance with QA procedures. If the proposed NCI did not have a serial number it was returned to the originator. Only a few of these cases resulted in a written NCI being "voided."

In no case was the NCI "voided" as a cover-up or in response to Construction pressures.

In order to provide more complete documentation, DPC has adopted two revisions to QA Procedure Q-1 to improve the process. They are:

- Always requiring a proposed NCI to have a serial number assigned before submitting it for approval.

- When a proposed NCI is determined to be nonvalid, an explanation is written on the NCI and a copy is given to the originator. The record copy is kept in the QA vault.

D. Failure to Maintain Adequate Material Traceability to Identify and Document the History of All Materials, Parts, Components, and Special Processes

GAP cites several SIE findings in the area of construction as evidence of a "massive breakdown in material traceability." Significantly, three SIE team

members who had been involved in the construction areas (one each from TVA, Duke, and INPO) stated before the Catawba Licensing Board that construction findings set forth in the SIE did not reflect a breakdown in the QA program (Tr. 10153-5) or "any practice which did or would have led to unsafe construction operation of the plant". (Tr. 10064-9.) DPC's response to SIE findings is set forth below:

1. CC.3-1: Site receipt inspection does not ensure that material and equipment received on site are evaluated against the requirements of the procurement specifications. Examples of the problems identified may potentially result in delays, waste of materials, additional time spent on disposition of deviations from procured materials and work stoppage. (Petition, p. 26.)

This finding related to cadweld sleeves and powder which had been requisitioned and received at another Duke site (Cherokee) as safety-related material. When transferred from Cherokee to Catawba the material was downgraded to nonsafety related status. Accordingly, there were no errors in the Catawba requisition or receipt inspection process. A Catawba steelworker foreman mistakenly allocated this material for a safety-related cadweld. The QA inspector, upon conducting the required inspection, would have determined that the material was not on safety-related material listing, and, accordingly, would not have let him use the material. (The SIE team observation occurred prior to the inspection point.) Therefore, we do not consider this finding to be significant.

2. CC.3-2: A consistent method for material identification was not in effect in the warehouse. Several instances were noted where I.D. tags had fallen off, equipment was marked with ink; and when material was being sectionalized to start fabrication, a means for maintaining the identification was not being done. (Petition, p. 26.)

Safety-related material is marked or tagged with proper identification. During the SIE audit, stick-on paper tags for electrical equipment identification were

found missing and falling off of the equipment. In that such tags were used for ease of warehouse icentification (not markings for QA purposes), we do not consider this to be significant Duke Power's inspection program prevents the installation of improperly identified safety-related items by requiring inspectors to verify before installation that material or equipment is properly identified and is the correct material for the job in question.

However, in order to prevent recurrence of this finding, a uniform warehouse marking system was developed and implemented in April, 1983. This system is audited periodically and will make the warehousing function more efficient.

3. CC.3-3: Proper protective measures were not taking place for environmentally-sensitive equipment that was "robbed" for spare parts. Some parts were being stored in an open door instrument cabinet. (Petition, p. 26.)

The "environmentally sensitive equipment" referred to in the finding was a nonsafety-related circuit breaker being temporarily stored at the Catawba Site by the Transmission Department. This breaker would not have been installed at Catawba and, therefore, could not have any affect on plant operation. It should also be moted that Duke Power Company's electrical checkout and functional tests would detect any equipment with missing or defective parts.

4. CC.3-4: Procedure QFP-8.002CNS, Rev. 1A does not indicate the disposition of unused filler material. Confusion appears to exist regarding handling of unused filler material and adherence to AWS code requirements could not be determined.

This finding applies to the control of welding filler material used by the HVAC contractor on-site. In this case, the unused filler material was being returned to Duke for rebaking at the end of each shift. The supervisor questioned in the observation was not responsible for this activity and was not

47-56

in a position to answer the question. Duke has performed several audits and surveillances of Bahnson's weld rod control program and found the material was being handled adequately, even though the procedure did not give specific instructions. Since that time the procedure has been revised to describe the practice in use.

5. CC.3-5: Materials are not being maintained or stored effectively at work site locations. Several examples were noted which reflected improper control. (Petition, p. 26.)

This finding is based upon several specific incidents. Each of these incidents is discussed below.

a. The SIE team found some pitted carbon steel piping in the pipe fab shop. It should be noted that the pipe minimum required wall thickness remained and thus, this did not present a safety concern. In any event, as part of the weld preparation procedure, any unacceptable pitting in piping is removed or repaired. Prior to installation of the pipe QA personnel inspect it to make sure that unacceptable pitting is removed or repaired. Therefore, due to the acceptability of the piping in question, and the procedures in place to prevent installation of unacceptable pipe, this finding is insignificant.

b. The SIE team found rust streaks on stainless steel piping that had been placed on carbon steel rollers. When left in contact with carbon steel, stainless steel may show some surface rust. However, rust streaks on the surface of stainless steel is not detrimental to the pipe. In any event, the required QA

cleanliness inspection required prior to use of piping in a safety-related system would have uncovered any unacceptable cleanliness problems. In short, this finding was not significant.

c. The third incident on which this finding is based involved the discovery that, in the storage yard, some ends of cable stored on cable reels were not taped as required. Such taping is performed to protect the cable ends from environmental damage prior to their installation. It should be noted that prior to installation, the ends of cable rolls are routinely discarded in the installation process. Thus, any damaged ends would not have an adverse impact. In any event, QA inspectors examine all safety-related cable end terminations. Any defective or suspect cables are identified so that they will not be installed in the plant. These measures ensure the installation of only those cables whose ends are acceptable. Further, extensive electrical checkouts and testing of safety-related systems prior to operation would detect any problems caused by damaged ends. Thus, plant operational safety is not compromised.

d. Finally, the SIE team found uncapped pipe in the turbine building. The pipe involved was not safety-related and, therefore, was not within the scope of our QA Program. Because of this, there is no safety concern involved.

6. CC.3-6: Scheduled preventive maintenance activities on installed equipment are not always assured throughout the entire period of Construction Department control. Equipment was identified for which preventive maintenance had been canceled up to 21 months ago, and there was no evidence that compensatory requirements had been established. (Petition, p. 27.)

The SIE team noted that some plant equipment was not receiving regular preventive maintenance throughout the time between system completion and turnover to operating personnel. It was determined that this problem was not significant because all safety-related equipment undergoes redundant inspections and tests by Construction and/or Nuclear Production to ensure all systems will function as designed. Any problems noted during these tests and inspections are documented and corrected as necessary. In response to this finding, the Construction Department updated its preventive maintenance program in March, 1983. This revision ensures that all equipment receives ongoing preventive maintenance during the period between installation and final turnover.

E. Failure to Maintain an Adequate Quality Assurance Program for Vendors

In support of this allegation, GAP raises findings in the Construction (CC) and Quality Procedure (QP) areas from the SIE regarding certain problems in the HVAC contractor's program. (Petition, pp. 27-8.) GAP asserts that these examples "illustrate that serious weaknesses exist in the vendor program" (Petition, p. 27). Significantly, in each of these areas, cognizant SIE team members, responsible for the findings raised have stated to the Catawba Licensing Board that such findings do not reflect a systematic breakdown in the QA program (Tr. 10153-5) or "any practice which did or would have led to unsafe construction operation of the plant". (Tr. 10064-9.) Duke Power Company's response to these SIE observations follows:

50-56

1. The SIE states that the following weaknesses were observed in control of HVAC contractor's welding program: (The SIE is attached as Attachment 6)

- No welder knew the weld procedure under which he was working. (p. 36)
- All welders knew required weld size and location, but did not know how they acquired that information. (p. 36)
- No process control was available to specify the welding procedure for plenum erector (from Drawing CN-1664-VA-000H, Rev. 0). (p. 36)
- Welder/Supervisor [i.e., foreman] picks welding procedure from all available welding procedures. Supervisor documents welding procedure(s) used on a support after the support is complete. (p. 36)
- There is no traceability of weld procedures to the finished weld. (p. 69)

The HVAC contractor's welding program includes a list of qualified welding procedures in each work package. The welding foreman selects one of these procedures, depending on the welding process to be used, the material being welded, and the type of weld being made. The foreman instructs the welder in the welding parameters and criteria to use in making the weld; thus the welder himself does not need to memorize the procedure number. The drawings, list of qualified welding procedures, and instructions by the foreman constitute the process control under the HVAC contractor's program. In addition, there is no requirement for traceability of the weld procedure used on type welds in question. In short, the SIE did not point out any instances where the welding technique was inappropriate and, accordingly, this finding, has no safety significance.

2. The SIE states that a welder was making welds without removing galvanizing material. (p. 36)

This was an isolated instance, not a common practice. For this application, removal of galvanizing material was considered to be of no detriment to the

51-56

weld. However, should galvanizing not be adequately removed in other applications, porosity would be very evident at final visual inspection causing the weld to be rejected and corrected. Therefore, this finding had no safety significance.

3. The SIE states that the HVAC support 2-H-VC-4999 had undercut in excess of that allowed by AWS D1.1 code." (p. 36.) Further, procedures did not meet Code requirements. (p. 69.)

In that the vendor's welding procedures did not strictly adhere to the undercut requirements of AWS D1.1 as referenced in Design Engineering's specification, these findings were valid. In short, the undercut found did violate AWS D1.1, but not the vendor's procedures. DPC conducted an analysis of the undercut and determined that the vendor's procedures were clearly adequate and would not adversely impart safety. As a result of this investigation, the Design specification was revised to remove overly restrictive undercut requirements. The basis for this action was that restrictive undercut requirement in AWS D1.1 are based on fatigue concerns. The design of the HVAC duct support systems is such that fatigue is not a concern and stresses for all other loading conditions other than seismic are relatively low. Therefore, HVAC systems were erected in accordance with design basis; there was never any question of the operation and function of HVAC systems. Accordingly, this is not judged to have any safety significance.

To assure that no other similar misinterpretations of Design Engineering specifications have occurred without Design Engineering approval, a complete audit of Bahnson has been completed by QA Vendors.

F. Conclusion

For the above stated reasons DPC submits that the GAP petition should be denied. DPC would note that in addition to the matters addressed above, GAP also requests the monitoring of Office of Inspector and Auditor (OIA).[12] GAP's request is premised upon an allegation that OIA has breached the confidentiality to be extended to individuals who come to them with information. DPC disagrees and offers the following response regarding the lack of confidentiality allegation against the NRC.

REFERENCE: GAP, page 30:

Mr. Davison's testimony (Duke Attachment 4) and deposition, (Duke Attachment 5) state the facts relative to conversations with NRC Resident Maxwell. Mr. Maxwell conveyed to Mr. Davison that welding inspectors had expressed their concerns to him and that they also were writing down their concerns in "a black book." At no time were the names of the inspector's given to Mr. Davison as alleged on page 30 of the petition to the NRC by Billie P. Garde. It is our understanding that Mr. Maxwell was advising Duke of non-nuclear safety-related problems and Duke did not consider any discussions to be a breach of confidentiality.

REFERENCE: GAP, page 43:

Review of the next to the last paragraph at the bottom of this page does not reveal any breach of confidentiality by the NRC to Duke Power Company. No one was identified as having called the task force a "whitewash."

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[12] GAP's request for an OI investigation has already been acted upon.

REFERENCE: GAP, Attachment 26, page 6:

In the affidavit submitted by Billie P. Garde (GAP) an incident is described in which two unnamed welding inspectors had allegedly "tested" the resident NRC Inspector to see if he could be trusted to not tell Duke specific information. According to the affidavit, they had reported a specific technical problem to the NRC and that the problem welds were "mysteriously "fixed" by DPC - without documentation of correction the next day."

There is no evidence to support the allegation that the NRC handed the problem over to Duke. Site personnel in QA and Construction-Welding are not aware of any problem welds being identified as a concern to the NRC being improperly handed to site personnel to have corrected. No specific evidence is presented by GAP to support this allegation. In fact, it is appropriate for NRC to point out problems and potential problems to Duke. When identified, by whatever source, Duke is responsible for correcting deficiencies in accordance with its QA Program.

It is also important to note that not all weld repairs warrant documentation depending upon the stage of fabrication and the governing QA Procedure. During fabrication, the craftsman is allowed to correct problems he finds with his workmanship and depending upon the nature of the defect that may/may not get documented.

We question the validity of this allegation. If the problem weld existed and was truly nonconforming, we have every reason to believe that the inspectors would have followed the QA procedures and identified this problem weld in accordance with the QA Program.

In sum, there is no support for GAP's request and it should also be denied.

LIST OF ATTACHMENTS

ATTACHMENT	DOCUMENT
1	Atomic Safety and Licensing Board Transcript (pp. 10053-10276)
2	Atomic Safety and Licensing Board In Camera Transcript (pp. 948-954)
3	Quality Assurance Procedure R-2, Rev. 9 (pp. CS-1, 1, 2, 3 of 3, Forms R-2A, R-2B
4	Testimony of Larry R. Davison (pp. 1, 13, 14, 15)
5	Deposition of Larry R. Davison (pp. 1, 16-23)
6	The Construction Project Evaluation for Catawba Nuclear Station, Units 1 and 2, September 27 - October 14, 1982 (SIE)

17A-C-1

EVENING SESSION

(7:35 p.m.)

JUDGE KELLEY: Go on the record.

We are here in the Howard Johnson this evening. This, however, is an open session. It's not an in-camera session of the Board, owing to the fact that the courtroom is not available to us, and we are here to hear the concerns of Mr. Harry Langley.

Maybe as a first order of business we should introduce ourselves. The participants should be introduced on the record, and after that I can state a few ground rules for tonight, and then we can get right to Mr. Langley's concerns.

I am James Kelley, and I am Chairman of the Licensing Board.

JUDGE PURDOM: I am Weldon Purdom, a member of the Licensing Board.

JUDGE FOSTER: I am Richard Foster, member of the Licensing Board.

MR. JOHNSON: I am George Johnson, counsel for the NRC Staff in this procedure.

MR. BRYANT: Jack Bryant, NRC Staff.

MR. MC GARRY: Mike McGarry, counsel for Duke Power Company.

MR. CARR: Al Carr, counsel for Duke Power.

MR. WILSON: I am Richard Wilson, for the State of South Carolina.

MR. GUILD: And my name is Robert Guild. I am counsel for Palmetto Alliance, and Mr. Langley has asked me to represent him this evening, and I will be acting as his counsel.

JUDGE KELLEY: All right. Now, Mr. Langley is here. Okay. We first met Mr. Langley at our initial limited appearance session, and he stated a preference for appearing before the Board in formal session, and we had a -- Mr. Langley had a brief appearance -- almost called a false start.

We were at that point trying to figure out just what procedures to follow with respect to people who would come in to volunteer information on the subject -- the subjects before us, so we didn't get into details of Mr. Langley's concerns at that time, as the record will reflect.

Since then we've developed some procedures to follow with respect to several people who came forward in response to a notice that we published and with respect to whom we have conducted some in-camera sessions, and those procedures, it seemed to us, were fairly applicable to Mr. Langley. They made sense to us to go that way.

I suppose you could say that tonight's session

is the same as the in-camera sessions except that it's not in camera, which may not seem too logical, but the lawyers will understand what I mean.

Specifically, our concerns tonight are to establish Mr. Langley's concerns on the record and to give counsel an opportunity to ask Mr. Langley questions and to then look into Mr. Langley's concerns insofar as they bear on our pending case.

You will be sworn, Mr. Langley, and you will be testifying under oath, and the evidence you give tonight will be evidence in the case.

We are hearing at this time a rather -- hearing the quality assurance contention. We have established a ground rule for these sessions that we don't want to get into close questions about whether a concern is inside or out of Contention 6, and we would resolve any doubts on that score in favor of going ahead and hearing whatever you have to say.

The understanding, however, would be that if at a later day if one of the parties moved to strike portions, we would then hear argument on the point, and I would say also that if a concern is in the Board's view quite clearly outside of Contention 6, then we might steer you away from that just in the interest of time.

In terms of dividing up our time tonight, we will

first hear from you and then after you have had a chance to lay out your concerns, we would have questions first from the Duke Power Company under the initial split of, say, 25 minutes, followed by 10 for the Staff, 10 for Palmetto, and 5 for the State. If the initial go-round takes more time for Duke, then some proportionally larger time will be allocated to the other parties, and the Board, I might say -- before we get into party questions, the Board may have some questions too.

We are operating under what we describe as a two-step procedure. I think you are familiar with the fact that the previously listed witnesses in the case have already been through what amounts to a two and sometimes more than a two-step procedure. They have had depositions and the like. We haven't had that in your case, and so tonight in some ways it's kind of like a deposition. It's an investigative type phase, and we would contemplate that later on in a matter of a few weeks -- we don't know just when -- you may be recalled for further testimony and further questioning. We wanted to avoid just in the interest of simplicity and time, a lot of formal discovery procedures in this case.

It may be that after this evening's session counsel for one of the parties may want to follow-up and get some further information from you. We don't contemplate

convening this entire group again for the sake of a few questions, and would ask you to cooperate and answer questions that may come up in the interest of expediting things.

If Mr. Guild is going to be your counsel in this case, counsel would want to put further questions to you and would go through Mr. Guild in the first instance.

MR. GUILD: Mr. Chairman, I should state that Mr. Langley has asked me to appear for him tonight. He is represented by the Government Accountability Project. Ms. Garde would have been here, but she was called to a conflicting engagement earlier today, and I would ask, as we have with the other witnesses, I anticipate that Mr. Langley will be prepared to be cooperative, and if counsel for the Applicants contact Ms. Carde in the same vein as the other witnesses, that we can obtain follow-up information if they need to.

JUDGE KELLEY: That's fine. We can understand then that Mr. Langley's primary counsel would be Ms. Garde. She is the primary contact in this matter if there is a further need to do so.

That is an outline of the way we want to proceed. Do you understand what I have been saying?

THE WITNESS: Some of it.

JUDGE KELLEY: Well, Mr. Guild does, and he can

give you further elaboration. But with that I think we will have -- we may have to shut that door at some point.

Why don't you just go ahead and describe your concerns in a way that seems natural to you. Just a narrative way. I would say this. As you go along, if you could bear in mind to the extent possible, we like to tie down particular things to particular times, places, people, and so on, so that the parties who want to follow-up on your concerns have a pretty good handle on just exactly what you are referring to. You might at the beginning say when you began with Duke and who you were working for, but as specific as you can will save more questions later.

MR. GUILD: Mr. Chairman, Mr. Langley is also in the process of -- of completing an affidavit that Ms. Garde is assisting him with, and it's only in a draft stage at this time, but I anticipate that it will be available in the very near future and that it will be distributed to the Staff as well as to the parties and Board in this proceeding so there will be a detailed document that will be available. It's in short order reflecting his concerns as well.

JUDGE KELLEY: Well, I think that that could be helpful. My only concern would be that tonight we cover all the bases and get the concerns basically out on the

table. So that -- insofar as -- I put it differently. We do have a case that we are running -- attempting to schedule here and bring to -- bring the hearing to a conclusion on, and my concern would be that some brand-new concern pop up in an affidavit a couple weeks from now. That may be a problem. There will come a point when it's too late to raise things, so tonight you are looking at a good time frame and certainly your basic concerns, as we would expect you to do, to put up for us to hear about tonight.

Now, I should swear you. Would you raise your right hand, please.

(Mr. Harry Langley was sworn.)

JUDGE KELLEY: Thank you.

Whereupon,

HARRY LANGLEY,

was called as a witness, being first duly sworn, was examined and testified as follows:

THE WITNESS: My name is Harry Langley. I was employed with Duke Power from April of 1977 to April of 1978. I was a QC welding inspector when I left the plant. When I first started working for Duke, I was a welder's helper. I worked as a welder's helper for about five weeks. I took the 154 pipe certification test, passed it.

I worked for a welder, a certified welder, for

about four months; and I went to QC school approximately eight weeks. I passed QC school, and I was certified as a welding inspector.

Prior to working for Duke, I served four years in the Navy, 39 months overseas. Then when I got out, I went to work for Westinghouse Turbine in Charlotte, and my job at Westinghouse was fabricating, welding, and -- of turbine parts, the nuclear turbine parts, and in between Westinghouse and Duke Power I attended two years of college at Winthrop College, and I'm working from an outline.

EXAMINATION

BY MR. GUILD:

Q What certification did you have at Westinghouse?

A Oh, certifications at Westinghouse was all the gas certifications, for all positions in GMA welding, and all the certification in stick metal arc welding.

When I came to work at Duke, I tried to do the best work I could, and up until I became a certified welding inspector, I thought I was doing a real good job, but once I became welding inspector, I was given the opinion that a good job was not what I was supposed to do. That I was supposed to do what I was told to do whether I thought it was right or wrong, and when I would try to do good work, a lot of times it would be rejected and I would be overruled by people who were supervisors higher up.

JUDGE KELLEY: Were you on a particular crew as an inspector?

THE WITNESS: Yes, sir. I worked -- as the inspector, I worked in Beau Ross's crew. I worked there for about -- as a certified inspector about four months, approximately four months; and while I was working for Mr. Ross, I enjoyed working for him. He was always helpful. He was a good person to talk to. If you had anything wrong, he would try to make you understand. He would go over everything with you; and if he didn't think it was wrong, he would help you make your decision. He would just help you. He wouldn't try to push anything on you. He would try to help you to do things right. I enjoyed working for him.

But then I met up with Mr. Larry Davison, and things began to change then. While we were -- okay. I'm getting ahead of myself.

(Witness confers with Mr. Guild.)

THE WITNESS: When I was elected to attend welding -- attend welding inspector school, we would start class -- Mr. Davison was our first instructor. We started the school, and during the first week, I guess, some of us wasn't doing too good, so the second week of school, the day before we were supposed to be tested on our next procedure, whatever it was, I came back from lunch, opened my notebook

up, and there was a sheet of paper with questions and answers written into them of the test that we were going to do the next day. At first I didn't -- I thought somebody was playing a joke, but I did check out the test, and, sure enough, the next day the same questions were on it exactly in the same order on the test, and each time -- each test afterwards we would come back after lunch. I'd open my notebook up, and there would be a test in my notebook, and the next day the test would go on. Answers, same questions.

That happened all the way through the written part of the school, and then when we had our oral part, the first person in came out and told the second person what was coming -- what was coming -- what questions was going to be asked, and while we were attending school, we would work -- go to school in the mornings, and in the afternoon we would go around the project with people who always -- who were already certified, and they would show us things to do, and during that time we were having to go and pick up documents out of document control, and that's -- I enjoyed working with Duke up until then, and one day when I had gone in document control and came out, this girl that I knew -- I think her name was Ann Ferrell. She was coming in document control, and we stopped and were speaking to each other, and Mr. Davison came up and asked

her if I was bothering her. He was trying to put me down, and I told him what he could do, and I went on about my business. So that got us on the wrong track. He was trying to make people look small, and he got us off on the wrong track.

So after we finished school and could go and inspect things of our own, when we would find something wrong, I would try to write an NCI. Sometimes I would get it through. Sometimes I would be overruled.

Once Lindsay Harris and myself were inspecting stiffeners in the third level of the Number 2 reactor, and Tom Mullinax's crew was putting his ironworker formen -- they were installing the stiffeners on the reactor wall, the containment wall, and they were putting the stiffeners up to where we thought they weren't put up to specifications, procedural rules and stuff, to codes, so we wrote an NCI up.

JUDGE KELLEY: What is a stiffener?

THE WITNESS: It's about a quarter-inch piece of metal, flat piece four inches wide and six-foot long that goes on the containment wall of the reactor and gives it more strength and keeps the metal from bending in case they get pressure on it.

JUDGE KELLEY: To reinforce it?

THE WITNESS: Yes. To reinforce the wall.

JUDGE KELLEY: They are welded on?

THE WITNESS: Yes, sir. Just welded from top to bottom.

JUDGE KELLEY: All right.

THE WITNESS: We would tell them that they were doing things wrong, but they kept doing them the same way, so finally we wrote an NCI, and they were leaving slag and stuff behind when they would weld and tack it up. They would leave slag behind.

I am not sure if I wrote the NCI or Lindsay wrote the NCI, but we went and tried to have the NCI initiated. When we went to talk to Mr. Ross, he felt that it was right. They were doing things wrong, so we took it to Mr. Davison, and when we got to Mr. Davison, he tried to talk us out of it, told us not to write the NCI, to go back down and tell the people to do it a different way.

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Okay. They wouldn't do it a different way, so we went back, and this time he didn't tell us anything. Just said let it go, and nobody came back, and even though we were trying to get NCI'd, nobody came back and told us anything, so we worked on with them.

Finally we just put an NCI on ten or twelve stiffeners and stopped them from working on them. I don't know if we went through him that time or just skipped him. We finally put the NCI on them and stopped them from working.

The engineer came down later. He cleared them out and said it was okay. Something about the code or procedures would allow so much slag in behind us, so we took the NCI's off there.

JUDGE KELLEY: When you say you took the NCI off, you mean you took the red tag off?

THE WITNESS: You had to sign it off up in the main office.

JUDGE KELLEY: Okay.

THE WITNESS: We cleared it out.

JUDGE KELLEY: Well, was that NCI assigned a serial number?

THE WITNESS: Yes. Probably around the 2400's or something.

JUDGE KELLEY: You don't know the number?

THE WITNESS: I haven't been there in a long time. I am just guessing it was around a certain point. It was on the Number 2 reactor.

JUDGE KELLEY: '78?

THE WITNESS: It was the first part of '78.

So our job on most of it was doing stiffeners on the walls, and we checked the fit-ups, completed them all the way through the welding.

MR. CARR: I am sorry. I didn't hear you. Checked the fit-ups and what?

THE WITNESS: We checked -- I said the job on those -- we were checking them all the way through from cleanup, fit-ups, all the way through visual; and when we got through, we would go -- and they would have the welders come in -- when they got through welding, we would go and check the weld out. A lot of it looked like bad weld.

This was on -- this was Larry Barker -- not Harry Barker. The baker -- the welding foreman. His last name is Baker. His crew was doing the welding on the stiffeners. When they would come and have us check the welding, they would have small welds and big welds on the stiffeners, and a lot of places they would have to grind a wide weld down to make it conform with the rest of the weld.

We found a bunch of stiffeners on the third level to the level of the air lock, and they had a bunch of overlaps in the wide passes in them, and the people would grind them down to make them conform. We didn't -- Lindsay Harris and myself didn't think this was right, so we tried --

JUDGE KELLEY: Let me clear about you and Mr. Harris. Sounds like you are working as a team. You are both inspectors?

THE WITNESS: We worked all the way around the thing, but if we had a problem, we could come down.

JUDGE KELLEY: But you are basically each inspectors?

THE WITNESS: Yes.

JUDGE KELLEY: And you would each work at different welds?

THE WITNESS: Yes.

JUDGE KELLEY: But if you found a problem, you would both consult on it?

THE WITNESS: Yes. We would get together and view each other's.

JUDGE KELLEY: All right.

THE WITNESS: So we thought that this was wrong, so we tried to write an NCI on it.

Mr. Davison would not let us write the NCI.

Told us to go back and let them -- said they could grind, but we knew they could grind them down. They could do grinding, but they were cutting into the wall -- containment wall where the stiffeneres were put up, and sometimes they would cut into where we thought was more than what was allowed by procedures.

JUDGE FOSTER: Is this all the same NCI?

THE WITNESS: No, sir. We got an NCI on about twelve -- on the fit-ups. This was different stiffeners. The first one was maybe twenty-five around -- twenty-five more stiffeners around from where the welding was being done.

They would put the stiffeners up and come around behind and weld them.

BY MR. GUILD:

Q Mr. Langley, the first one was rejectable at the fit-up stage?

A Yes, sir.

Q And the second was at final visual?

A Final visual.

Keep me going.

Q Doing good.

A So we went back to work and let them do whatever they want and grind.

Finally we got the NDE inspectors to come down

and check them, and if they approve them, we would let them go as is. They would do an MT test on them, and if they don't show up lack of fusion or voids or anything in them, we would let them go, but we still felt that there should have been an NCI because some of the welds really looked bad.

They would grind the porosity out of the welds. They would -- they would have to grind on the welds to make the pass.

Some of the welders couldn't weld a small pass and make it go up, and after that we just let them go. If it looked good, we didn't -- didn't seem like you could get an NCI on a stiffener.

After that, my next concern is on the thirty-inch pipe. It's on the fourth level to the right of the air lock -- it's right of the air lock in the Number 2 reactor. It's a thirty-inch pipe that comes through the wall. I believe it comes over the top of the auxilary building and goes in through the reactor and down into -- I'm not sure, but it's a sleeve that is put into the wall before concrete is poured, and when they poured the concrete and took the boards off, the concrete -- there was bad concrete.

The pour didn't mesh up to the pipe, and there was voids between the pipe and the concrete, and in order

to make a repour, the flanges on the end of the sleeve that goes through the wall had to be taken down, had to be cut off and put back on.

In the process of cutting it off and putting it back on, they bevelled the edges down. Once they got the concrete poured in there and the flanges had to be welded back onto the sleeve.

They didn't have any way of encouraging them back because they wouldn't let them weld it with sticks. They had to put a steel pass in with a tig and you only had purged from the front.

Okay. When you don't purge a tig weld, you have -- they call it sugaring up on the back. It's not a good pass. It's something laid in there to have a base to start off on, and we felt that this pass would not be sufficient for the rest of the weld to come out because this was in the reactor wall -- outside reactor wall, so we tried to get an NCI on that.

I took the NCI and got it past Mr. Ross. I took it to Mr. Davison. He told me to go back to the reactor and he would send the engineer down to explain to me why they could do it and why we shouldn't write an NCI on it.

The engineer came down and told us that you really didn't have to purge the back of that weld because

it was insignigicant by it being in the wall, so we let that go. We still felt that it should be purged on the back, but they went ahead and poured the concrete and welded it up.

The next concern was on the containment wall where the knuckle plates come up on the outside of the wall. Probably -- it's on the second level. I think the stiffeners were 18 and 19. Someone had gouged into the containment wall, and people were trying to repair it, and they couldn't -- ran into some lamination where they tried to repair it.

We kept checking trying to get the lamination out. We were using the MT's that the NDE people were doing, and we couldn't chase the lamination out of it, so we tried to write them -- write an NCI on it. I think to change the construction procedure 22 or so. One of the construction procedures.

We tried to get an NCI. We got that one through, but we ran into trouble with Mr. Davison. He was wanting to do without writing NCI's, and we felt there should be an NCI written on it.

I think they did it on Construction Procedure 106 -- one of them. I forgot. It's been a while.

But finally we got that cleared up, and we got it done. Then on -- my next concern was on the personnel ---

MR. WILSON: Excuse me, Mr. Langley. Backing upon the containment wall. That was in Unit 2?

THE WITNESS: Unit 2. It was on -- right as you come over the knuckle plate. It's the second level. It's in between 18 and 19. The stiffeners.

MR. WILSON: Um-hum.

MR. CARR: I lost you there right at the end. Did you write an NCI on this?

THE WITNESS: No, we didn't get an NCI. They did it in another -- on another construction procedure. Something like that.

Then air lock. We began cleaning up the air lock, trying to fit it up to the containment wall.

JUDGE KELLEY: This is on Unit 2?

THE WITNESS: This is on Unit 2.

JUDGE KELLEY: It's all in Unit 2?

THE WITNESS: These concerns are.

JUDGE KELLEY: All right. Go ahead.

THE WITNESS: Okay. When we -- we were working with Tom Mullinax's crew. They were ironworkers, and it was Baker's welding crew, and they were putting it up. We got everything cleaned up, and we were trying to give them a hand fitting it up, and they were putting welding four-inch tacks from the air lock to the containment wall.

The air lock had a ring on it approximately an

inch and a half thick, and the containment wall was three-quarters of an inch thick. The specifications call that you preheat two different sizes of material to a certain degree. The welders or whoever was supposed to be putting it -- the fitters or whoever it was -- were supposed to be putting their heat -- they weren't putting the heat on. They were tacking it in, trying to get a fit-up on it.

The tacks were breaking, and you could see -- usually see cracks in the tacks, and they would keep telling them to keep the heat on, keep it from pulling on one section and not pulling on the other. We tried to [illegible]em because all the tacks were breaking.

I went --

JUDGE KELLEY: Can you give us sort of an idea? Maybe I'm the only one in the room that doesn't know what a looks like.

THE WITNESS: A four-inch weld between the containment wall and the air lock that holds it in place until you start welding all the way around.

JUDGE KELLEY: It's a temporary hold?

THE WITNESS: Yes, sir. Its' temporary.

JUDGE KELLEY: Four inches long or so? Like a nail?

THE WITNESS: Yes.

JUDGE KELLEY: Instead of a tack?

THE WITNESS: And spaced about every foot or something like that. And I went up the hill to talk to Beau to see what I could do, if they were doing it right, and by the time I got back down, they were covering up the cracks in the tacks with new weld.

So then we told them to stop, and they said they were going to cut this back out, and they were going to let it go on that because it would be background and taken back out.

Then they started welding the root pass in. We checked the fit-up and got everything squared away. The fit-up was okay.

They started putting the root pass in. We kept telling them to keep the heat to it to keep both materials the same temperature, so they wouldn't be pulling and cracking on it.

Well, each time Lindsay would go by one time and check on them and I would make the circle. We just checked out -- checking -- inspecting different things, and we would go by and check, and each time we would go by, they wouldn't have heat on the metals. They would be welding without a temperature on it, so after about three times, I wrote an NCI on them.

I took it up to Beau Ross's office. Beau signed it off. I took it to Mr. Davison to get him to

sign it. When I got to Mr. Davison, he didn't think I should write the NCI. He told me so.

I told him I thought I should. He informed me that it took nine months to clear all the NCI's up on the Number 1 reactor personnel lock.

I told him it didn't matter how long it took. We were going to do it right, and if it took nine months again, we were going to have the thing right.

He told me I didn't know how things were run, and I said, Listen to him. I said he could sign it or what. I was still going to write the NCI, and he told me that -- again he told me that we were not going to take all the time to do it on Number 1 if it took different inspectors to do it, and I asked him if he wanted to sign it. If he didn't, I would go up there without him signing it, and I would still write the NCI.

So he finally signed it and got the NCI on that one.

JUDGE KELLEY: I wanted to ask you this before. Davison signed off and then you say you were going to go up there. Do you mean go up and get a serial number assigned?

THE WITNESS: Yes, sir. You had to go by Mr. Davison.

JUDGE KELLEY: That' what I wanted to know.

THE WITNESS: Yes.

JUDGE KELLEY: This is '78 or so?

THE WITNESS: February of '78.

JUDGE KELLEY: Right.

THE WITNESS: So I got the NCI, took it back, put it on -- I think it was 205, 206, two different parts, as the air lock that went in there, and within about an hour the welding engineer came down and told me that they could weld without putting the preheat on the back and told me to go ahead and clear out the NCI, that everything was okay, so I cleared the NCI out.

JUDGE KELLEY: I don't understand. You had gone and gotten a serial number by this time?

THE WITNESS: Yes, sir. It had already been serialized.

JUDGE KELLEY: How could you then clear it out?

THE WITNESS: We had to sign it off as being clear or they could -- somebody had to sign the thing off. Either the person that initiated it. Sometimes they would do it. They would just tell you that your NCI was clear.

Take the tags off of it.

JUDGE KELLEY: Yes. I am just trying to understand. I can see a message coming back from OA saying to you everything is fine, Langley. Take off the

tag. I understand that. But I don't understand how you could resolve an NCI once it's in the system.

THE WITNESS: Okay. We only signed -- you had an NCI log in the main office. When you got your number, that the log was in the main office.

JUDGE KELLEY: Right.

THE WITNESS: When the NCI was cleared and whatever you had the NCI written on, you had to go back and sign it off in the log. We only cleared the log out. We didn't clear the NCI.

JUDGE KELLEY: All right.

THE WITNESS: Engineering or one of the other groups cleared it out.

Oh, boy. We went ahead and took the tags -- the Q-1B's off the air lock. I didn't think it was that much use to keep watching them because they could weld it the way they wanted to, and it didn't seem like we could do anything about it.

So we would check them out once in a while to make sure they wasn't welding too hot. There was a temperature range of what they were welding with, and we would check it, and as long as it was within reason, we would let them go.

'7C-C-1

JUDGE KELLEY: Is there a single airlock or a whole bunch?

THE WITNESS: When I was there, there was only one. The personnel airlock.

Do you have an airlock that goes in for the equipment? You do, don't you?

MR. BRYANT: Not an airlock.

THE WITNESS: There is an equipment hatch. You go in on the third and fourth level. In between the third and fourth level the airlock comes in.

JUDGE KELLEY: I am only trying to determine whether it's something one could readily identify.

THE WITNESS: Oh, yes. It's a personnel airlock. It's decontamination.

JUDGE KELLEY: All right.

THE WITNESS: Well, we finally got that cleared up. Then we were working on some more stiffeners, and this was later on. On the fourth level Tom Mullinax's crew was putting stiffeners up, and they were tacking them onto the wall. Well, the night before, the temperature had got down way below freezing, and while they were tacking them onto the wall, I stuck a temperature gauge on the wall to check the temperature out, and it was below freezing, and the procedure read that before you could tack anything up, it had to be preheated above freezing temperature. They were

17C-2

going ahead and tacking it up, and the wall was below freezing.

So I stopped them to write them up for violating the preheat on the welding.

JUDGE KELLEY: Let me know if anything bothers you. It's cooler with the door open.

THE WITNESS: Leave it open.

JUDGE KELLEY: Speak up if it's too noisy. We will close it if it's too disturbing.

(Discussion off the record.)

THE WITNESS: When I went to get an NCI, I was told by Mr. Davison to let them go ahead and preheat the wall up and go ahead and stack the stiffeners on the wall, so I went back down, and I let them tack the stiffeners on the wall. We let that go. Most of the other times the people would work and do things that they were supposed to do, and on another concern is about the falsification of records on the job.

I only had one particular incident where records were falsified, but I felt that maybe we were missing some of them. The only reason we caught this one was the welder that falsified the document was 14, 15, 16 stiffeners in the second level on the Number 2 reactor.

The only reason we caught the falsification was that he had signed the wrong date. He signed a date late --

above on the preheat, and what the date on the fit-up was. He had the wrong dates on it, and he came to me and asked me if I would cover it up for him, and I told him no. He would have to go and let management know whatever they were supposed to do. We couldn't -- we couldn't cover up the falsifications of it.

I don't know. That was the only thing I saw, but I feel like there were others that we just didn't catch.

They went ahead and cleared out, and I had left by the time they got everything cleared on it. I am pretty sure it was documented and cleared out.

JUDGE KELLEY: Let me -- falsification is a serious thing, and we want to know as much about it as we can. Can you name the person that you were referring to?

THE WITNESS: I can give you the weld number.

JUDGE KELLEY: The weld number. And that would give you the person?

THE WITNESS: They got the stencil. It's K34.

JUDGE KELLEY: Okay.

THE WITNESS: It was on -- it was on the stiffeners on the second level.

JUDGE KELLEY: And I'm not entirely clear I understand the nature. One, what exactly was the document that this man falsified? Some form? The M-4 or Q-1?

THE WITNESS: I think it was -- it's like an M-4.

JUDGE KELLEY: That is the Traveler document?

THE WITNESS: Yes, but it's not -- you see, it was on the containment wall -- 24? Okay. It was on the containment wall. It's a Traveler, but he had signed -- he had forged one of the inspector's name on -- it was on three different things. Three different documents. He signed the inspector's name three times.

JUDGE KELLEY: So he forged an inspection approval?

THE WITNESS: Yes, sir.

JUDGE KELLEY: On these stiffeners?

THE WITNESS: Yes, sir.

JUDGE KELLEY: That you described?

THE WITNESS: Yes.

(Pause.)

MR. WILSON: Mr. Langley, do you remember whose name was forged or whose initials were there?

THE WITNESS: It was CDC. Charles D. Crisp is the one that was forged.

JUDGE KELLEY: Thank you. That's a good point.

THE WITNESS: When he came to me, he was scared. The welder was scared and asked --

JUDGE KELLEY: If he forged Crisp's name, he is home free.

THE WITNESS: He wanted me to do a visual on his

weld.

JUDGE KELLEY: There was a subsequent test?

THE WITNESS: Sir?

JUDGE KELLEY: This was a later test on the same weld?

THE WITNESS: I had to do a visual. I had to sign the visual off on the weld, and he knew that if he looked and saw the wrong dates on there -- the dates were upside down. The date on the bottom was a day before the date on the top, and you go in -- you take each step at a time and you can't have different dates. You go down the line. It's in progression, and he was scared because he had been -- he told me -- now, this is hearsay. I don't know if I should say it.

JUDGE KELLEY: Go ahead.

THE WITNESS: He informed me that if they caught him doing it, they would fire him for it. He had been told if he skipped a step on one of the documents, that he would be fired for it, and he was scared.

I told him to go talk to Beau and see what Beau had to say. Tell his boss man, his foreman, and then go up there.

BY MR. GUILD:

Q And what happened?

A He went up -- I think he took -- I think Baker was

the welding foreman for him. Baker went with him. They went to Beau, and Beau took him to Mr. Davison, and then the whole group went to Mr. Beam, and they gave him a B violation and sent him back to work.

JUDGE KELLEY: What did he want you to do?

THE WITNESS: He wanted me to change the dates on the document.

JUDGE KELLEY: Oh.

THE WITNESS: And I wouldn't do it.

JUDGE KELLEY: I see.

THE WITNESS: These are just examples of what I remember. I feel like there were more, but I do remember these good.

I will answer questions, you know, in detail.

JUDGE KELLEY: First of all, you have obviously put a lot of thought into coming here tonight and organizing what you want to talk about, and we appreciate that in having things in order and thinking about names and so on. That is very helpful to us.

Now, are we at a point where we would pass to the Board and counsel questions?

MR. GUILD: If I can have a moment, Mr. Chairman.

(Pause.)

MR. GUILD: Mr. Chairman, if I could ask a question and speed things up.

JUDGE KELLEY: Uh-huh.

BY MR. GUILD:

Q Mr. Langley, in the original public session where you first came forward and gave the outline of your concerns, you mentioned the subject of prenotification of what you believed was an NRC inspection, something about notes in your pigeonholes when you came in to work. You had subsequent discussions with representatives of the NRC Staff about that, and how about if you just give us a summary of that subject and what you concluded?

A Spot checks?

Q Yes.

A On the Travelers they would have hold points on the Travelers, and it would be marked A and I man or the insurance -- that the insurance man? They would come in and they would have a hold mark, but at different times we had boxes in the office that if someone wanted to leave a message they would leave it in there, and the different times -- there would be an inspection on a certain number. They would give the number and where it was and the part. I always thought it was the NRC, but maybe it was somebody else. I am not sure. I thought it was the NRC that was coming in because when they came in, we knew that they were coming. We would know in advance of when they were coming. They would pass through the grapevine. I don't know where

it started, but we would know when they would come, and we would get ready for them.

18 fols

Evening
Take 2

JUDGE KELLEY: But you feel that wasn't a real test of what you were doing because you would take special precautions in advance?

THE WITNESS: We would, and I would try to stay away from it because I was given the impression that they were the bad people and if they asked you a question to answer the question, but that was it and make sure you knew the answer. I backed off and I stayed away from it.

JUDGE KELLEY: Were you instructed by anybody to withhold information from the NRC inspectors?

THE WITNESS: We were told that if they asked us questions to answer their questions but not to volunteer anything.

JUDGE KELLEY: We have been here about an hour. we are at a point now where we are passed questions, don't we take a five-minute stretch and then go on stioning.

(Brief recess.)

JUDGE KELLEY: Let's go back on the record and resume. The Board I think will have a few questions

JUDGE PURDOM: Mr. Langley, I believe it was your Item 4, your fourth item, something about the containment wall and there had to be some grinding and somebody found some lamination. Would you explain that a little more fully for me where that was?

2-1

THE WITNESS: It was on the second level, right up after you come up to the knuckle plate. Where the bottom of the reactor turns it comes up on a vertical. There was somebody who had gouged into the metal and when we started checking we found lamination in the metal.

JUDGE PURDOM: This was not something being welded to the wall. This is a gouge that was being removed from the wall?

THE WITNESS: Yes, sir, but it had to be repaired. The gouge had to be repaired, but while we were checking it and cleaning the place and getting it ready to be repaired we found lamination.

JUDGE PURDOM: That was on the second level. Is there any better description of that than that?

THE WITNESS: To the right of the air lock. It was right down below the air lock, on the right side of it.

JUDGE PURDOM: How deep would this gouge have been, do you remember?

THE WITNESS: It was below the minimum wall thickness and had to be repaired.

JUDGE PURDOM: Would it have been a quarter inch?

THE WITNESS: Somewhere thereabouts.

JUDGE PURDOM: Describe the nature of the repair.

THE WITNESS: It looked where either somebody

had torn something off of it and pulled the metal with it and he had to do a repair document on it.

JUDGE PURDOM: How long would this gouge have been?

THE WITNESS: Two inches.

JUDGE PURDOM: How did you know it was laminated?

THE WITNESS: We had the MT people check it before we would let them start repairing it. Once it got cleaned up we had the MT and the NDE check it and they ran a magnaflux test on it. They left part of what they had used and there was some lamination in the wall.

JUDGE PURDOM: Whose crew was that that did that work?

THE WITNESS: The welding crew was Baker. I don't know is first name.

JUDGE PURDOM: Did they have any trouble making the weld repair?

THE WITNESS: Not to my knowledge.

JUDGE PURDOM: So what you were trying to write up the NCI on was what, on the gouge, on the lamination, or what?

THE WITNESS: We were just trying to get it documented to make sure there was documentation on that piece right there. That is what my understanding was, that if you found a bad place in the wall you have to document

it in case you want to go back.

JUDGE PURDOM: Well now was it bad because it had the gouge or bad because it had the lamination? What made it bad?

THE WITNESS: It started out with the gouge. We checked it out and you could only go to a certain depth and you had to document it all on a construction procedure. Once we find lamination we try to get an NCI on it then.

JUDGE PURDOM: Were you just as well with the construction form being used as the NCI form being used, or it didn't make any difference to you which form was used?

THE WITNESS: I just wanted to get it cleared and to get the place on the wall right. I was new at that time and I asked the other people which way I should go. I checked with the people that had already been there a while.

JUDGE PURDOM: Now Mr. Davison on that didn't want you to write an NCI you said. Was his reason because he felt this other form was appropriate or he didn't want it documented?

THE WITNESS: I guess it was because he wanted it on the other form.

JUDGE PURDOM: He didn't say?

THE WITNESS: He said do it the other way.

JUDGE PURDOM: Do it on the other form.

18-5

I guess this is your No. 3, this 30-inch pipe sleeve through the wall that is going to be poured with concrete.

THE WITNESS: Yes, sir.

JUDGE PURDOM: Now you said they poured the concrete and when they took off the forms there was wood between the concrete and the pipe sleeve?

THE WITNESS: No, sir. The concrete didn't contradct into the pipe sleeve. It had to be repaired.

JUDGE PURDOM: You mean there was space between the concrete and the pipe sleeve or what?

THE WITNESS: Yes, sir.

JUDGE PURDOM: Was there honeycomb?

THE WITNESS: Yes, sir.

JUDGE PURDOM: And then what did they do, did they get an air hammner in there and take some of the concrete out or what did they do?

THE WITNESS: The cut the flange off the inner side and repoured the concrete in there.

JUDGE PURDOM: How did they repour the concrete, did you notice that?

THE WITNESS: They formed it back up and poured it in from the top and let it form back around the sleeve.

JUDGE PURDOM: I guess that is what I am having trouble understanding. The concrete that was poured, was

it knocked out of the way or taken away?

THE WITNESS: There were voids around the sleeve. They went in and cut the flange off the sleeve to get an access in to pour some more concrete in there to fill the void up.

JUDGE PURDOM: So they what, forced it it?

THE WITNESS: No, sir. They cut the sleeve off of it. The sleeve was maybe a three or four-inch sleeve coming up.

JUDGE PURDOM: This was going through kind of like a floor section?

THE WITNESS: It is coming through the concrete wall.

JUDGE PURDOM: A vertical wall or a horizontal wall?

THE WITNESS: The outside concrete wall was reactive.

JUDGE PURDOM: And the pipe was going horizontal through the wall?

THE WITNESS: Yes, sir, the pipe would be going horizontal.

JUDGE PURDOM: I am having trouble now understanding how they got the concrete around the pipe sleeve.

THE WITNESS: They took the flange off of the sleeve. They left the sleeve in place. The cut the flange

18-7

off and formed it back up and poured the concete in from the top to fill in the void that was left between the sleeve and the wall.

JUDGE PURDOM: It had space left between the form and the concrete so they could pour it from the top?

THE WITNESS: Yes, from the top.

JUDGE PURDOM: Well, when they got through doing that, did the concrete fit snug to the pipe?

THE WITNESS: The concrete, they poured it pretty good. It was sufficient back in there.

JUDGE PURDOM: And then the problem you were concerned with came when they started to weld the flange back on?

THE WITNESS: Yes, sir.

JUDGE PURDOM: That is all I have.

JUDGE FOSTER: A couple more questions on that gouge in the containment wall and the lamination. Am I right that it was in the containment wall itself?

THE WITNESS: Yes, sir.

JUDGE FOSTER: Do you know if those plates making up that wall, were they fabricated on site?

THE WITNESS: No, sir. They were brought in. There were some lifting rings that were fabricated on it and it was set in place. They would have to take the lifting rings off of it.

18-8

JUDGE FOSTER: That was Unit 2?

THE WITNESS: Yes, sir.

JUDGE FOSTER: You were talking about that heat problem. I guess it was an airlock where the welding was going on and where you tacked the piece up to begin with and they they were welding around without keeping the heat on both places.

THE WITNESS: We had to heat it from the back side. If you were welding one side it had to be heated from the back side.

JUDGE FOSTER: What you were noticing there, was that a written procedure which was being violated?

THE WITNESS: If memory serves me correctly, it had to preheated to 175 degrees.

JUDGE FOSTER: That would be in the construction procedures where it would call for that, is that right, or is that a part of your welding inspector's procedures?

THE WITNESS: It was a construction procedure, a heat treatment procedure. I can't remember exactly which procedure it was, but it was on the heat treatment part of it.

JUDGE FOSTER: Did you have a procedure as a welding inspector that would call for you watching that kind of thing?

THE WITNESS: Yes, he had to keep checking. It

couldn't be welded under a certain temperature. I believe it was 175 degrees. It had a range from 175 to 500 or somewhere like that and it had to be welded in between the ranges.

JUDGE FOSTER: So a part of the welder inspector's job was to watch what was going on while it was being welded to make sure that the heat was being applied?

THE WITNESS: We had to keep checking to make sure there was continuous heat put on it.

JUDGE FOSTER: Did you contact the welding foreman at all on that, or are you just talking about the welders themselves?

THE WITNESS: I believe we told the foreman to make sure that he had the heat on it.

JUDGE FOSTER: After the welds were finished, I presume there was some welder inspector inspections there, too?

THE WITNESS: Yes, sir. We had to do visuals on it.

JUDGE FOSTER: If the heat had not been applied as it was supposed to and then subsequently on the visual inspecation after the weld was completed, is there any way of telling at that point from your visual inspection later that an improper procedure had been used?

THE WITNESS: On visual the only thing we could

see would be the outer side of it, just the surface of it. We couldn't see below it.

JUDGE FOSTER: Would these welds get any other kind of inspection?

THE WITNESS: They got an X-ray.

JUDGE FOSTER: They were going to be X-rayed later.

THE WITNESS: Yes, sir.

JUDGE FOSTER: On that last question that was brought up here, your pre-advice about an inspector is coming, I didn't understand whether these were NRC inspectors. There may have been somebody else, some other inspectors that were coming. Can you clear that one up for me?

THE WITNESS: On the hold points, we would know the ANI man, and they would want to come and look at a certain thing. We were getting -- I say we, but I mean I -- I got notes. They wouldn't say who was going to check. It would just have check hold point such and such a number. But we did know when the NRC people was coming.

JUDGE FOSTER: Okay. But the notes, you don't know who it was that was going to look at it. I kind of gather that you think it may have been an ANI guy.

THE WITNESS: I didn't understand because you would always have a hold point on a traveler. You would go to a certain point on a traveler and stop. Then whoever

was going to inspect it would come in and check it out.

JUDGE FOSTER: Do I understand then that when you did get the note saying that somebody was going to look at it, you didn't know whether it was going to be ANI or the NRC, did you?

THE WITNESS: No, sir.

JUDGE FOSTER: Or it could have been somebody else even.

THE WITNESS: It didn't say who was going to look at this.

JUDGE FOSTER: It just said somebody is going to look at it?

THE WITNESS: Yes, sir.

JUDGE FOSTER: It is going to be looked at. That is all I have.

JUDGE KELLEY: Mr. McGarry.

EXAMINATION

BY MR. McGARRY:

Q The first area is the examination, Mr. Langley. To your knowledge, did everybody in your class get a copy of the test in their book the day before the exam?

A I couldn't say if everybody got a copy. There was more than myself that got them.

Q Do you know who else got them?

A The weld inspectors got them.

18-12

Q To your knowledge, all the welding inspectors in your class got them?

A Yes.

Q Was there anybody besides welding inspectors in your class?

A There was some mechanical people in there during the first part of it. I don't think they stayed with us the whole time. When Mr. Davison and Mr. Baldwin were instructors, the mechanical inspectors were in there. I don't know if they were civil, electrical or what, but there were different ones.

Q To your knowledge, were they involved in this alleged cheating?

A I couldn't say so. I wouldn't point anybody out.

Q To your knowledge, your concern is limited to the welding inspectors who took the exams, first yourself and then the other welding inspectors who took the exams?

A Yes, sir.

Q Now were these daily tests or weekly tests?

A Like we would go over the procedures and I think maybe it was once a week and maybe sometimes twice a week wherever we would have the test. We would have a daily test. Most of the time they were separated by a few days.

Q But every time you had a test, the day before

you would find a test stuck in your book after lunch and in that test would be the test for the next day?

A Yes, sir. Now the first test we had we didn't have it, but from the second test on we had them.

Q And how many tests would that have been?

A I can't recall. We were there eight weeks. So I will say it was seven at least.

Q You say you took an oral examination. Who was the first person in for the oral examination?

A I can't say. I think I was about third.

Q Who told you the answers?

A Well, as each one came out that is expected because he is going to pass on some information to the next person to make it easier. I mean that was expected there.

Q Who passed on the information to you, to the best of your knowledge?

A I can't remember.

Q Was it a welding inspector?

A Yes, sir, it was one of the trainees.

Q Who did you pass on information to?

A To the last guy?

Q Who was that?

A I think it was Crisp.

Q I just ask you because it is fairly important, as the Board pointed out. Just take a second and see if

you can think who passed the information along to you.

A Well, there were only two more people.

Q Who were they?

A You are going to get me to name everybody before this is over with.

MR. GUILD: How many welding inspectors were there in total in your class?

THE WITNESS: He knows that.

MR. McGARRY: One is Crisp and one is yourself. So we have got two of them. Who were the other two? We have already got one name.

THE WITNESS: I don't know the first name.

JUDGE KELLEY: As long as the subject has been opened up we will just make it clear whatever you remember of it you should say.

THE WITNESS: One of them was Sheriff. Another guy's name was Ronnie. I don't remember what his last name was.

BY MR. McGARRY:

Q So either Sheriff or Ronnie passed the information along to you?

A Yes, sir.

Q Who administered the oral exam?

A Beau Ross.

Q Stiffeners is the second subject. You worked

on the stiffener matter with Linsey Harris?

A Yes, sir.

Q Did any other welding inspector work on this with you?

A Sometimes Charles Crisp would help us. If he were swamped and he could get loose he would help us.

Q Now this was Tom Mullenix's crew; is that correct?

A Yes, sir.

Q And he was a welder or a pipefitter?

A He was an iron worker or steel worker. He was a foreman.

Q Where were these stiffeners located?

A There were probably 50 stiffeners that were left on the third level to the left of the personnel airlock up there.

Q Fifty stiffeners left in the personnel airlock, is that correct, on the third level?

A Yes, sir.

Q When you say to the left, is that as you walk in through the air lock it is to the left?

A Yes, sir.

Q And you gave directions for some of these . . we appreciate it, but at each instance it would be walking into the building as opposed to facing it and looking at it?

A Well, if you are going in from the outside to

the inside, it would be to the left.

Q Now in this instance you said the personnel airlock. It is my understand that there were three hatches or airlocks. One is the personnel down below and that goes to the aux building. One is up high and that goes to the spent fuel poor. And up also high is equipment.

A Yes, sir.

Q Are we talking about the one down low?

A We are talking about the personnel. I am not sure, but I believe if you go inside and come back out, you have got an airlock in there and they either decontaminate in there or something. This may be an eight-foot diameter walkway that goes in there.

Q You said you went to talk to Larry Davison about this stiffener problem that you saw, correct?

A On the fit-ups?

Q Yes, sir. You said you wanted to write an NCI because they are leaving slag and tagging up and you and Lindsey Harris went to Beau Ross and he agreed and then you went to Larry Davison and he tried to talk you out of it.

A Yes, sir.

Q And did both you and Lindsey go to see Larry Davison?

A I think I went to see Larry.

Q Did both you and Lindsey write up the NCI?

A We only put one name on it.

Q Was it your name or Lindsey's?

A On those 12 I believe it was Lindsey's name. See we worked together on it.

Q I don't want to confuse things because there are two sets of stiffener issues and I want to stay with the first set.

A I understand what you are talking about.

Q Okay. I may have gotten a little confused here. Larry said to let it go, in other words, don't write an NCI. But then you put on an NCI on 10 to 12 of those stiffeners anyway?

A When they kept putting then up when we told them not to. They kept doing it. The ones who went first, they didn't do it. Okay, they kept putting them up and they kept doing what we told them was wrong. So the NCI was put on about 12 of them after that.

Q Then an engineer came and told you to clear them out. Who was that engineer?

A I think his name was Llewelyn.

Q I am sorry?

A Llewelyn. He is from Duke.

JUDGE KELLEY: Duke University?

THE WITNESS: Yes, sir.

Q Do you know if his first name is Dave?

A Dave or Doug, something like that.

Q Did he have any paperwork with him, any documentation?

A No, sir.

Q He just told you to clear it out?

A You could be allowed so much. They were saying something about the wall could be not straight up and down and you could have boards and sometimes the slag would get in there behind the boards but when it was welded up everything was solid.

Q This was the No. 2 reactor you were talking about.

A Yes, sir.

Q You said grinding down the wall and you were cutting into the containment wall. Whereabouts and which welds are we talking about?

A The second and third levels to the left of the personnel airlock.

Q This is all in the same area or am I confusing something?

A Well, the fit-ups were on around from that. They would always be ahead of the people welding. They would be back, maybe 30 stiffeners back from where the fit-ups was.

Q So the 10 to 12 stiffeners were about 50 stiffeners to the left of the personnel airlock; is that correct?

A Yes, sir.

Q Now the next item was the grinding down of what?

A Once it was welded they would come to get us to do a visual, and when we would go and check it out, some of the welds were real wide. From the heel to toe it was only supposed to be a certain distance. There was a minimum and I think there was a maximum space.

Q I can speed it up. YOu don't have to tell me that. I just want to know where they are located and I don't want to keep you here all night. So I am trying to push through.

A I would say 25 stiffeners from the left of the personnel airlock. It is hard to remember the number.

Q And this was on the third level?

A The second and third. It was different ones.

Q And you said you tried to write an NCI, correct?

A Yes, sir.

Q Was this again with Lindsey Harris?

A I don't think Lindsey was there that time.

Q Charlie Crisp?

A We might have been together inspecting, but I tried to write the NCI.

Q I nave not asked you any "when" questions because

my assume is you were a welding inspector for four months.

A January to April.

Q Of 1978?

A '78, yes, sir.

Q And of course all of these concerns you have occurred during that time?

A Yes, sir. While we were in school we went around with experienced inspectors and we just observed what they were doing and we didn't find anything out.

Q The next item is the 30-inch pipe on the fourth level to the right of the airlock.

A Yes, sir.

Q Again, it is to the right as you walk through the airlock?

A Yes, sir.

Q What system was that pipe associated with?

A I could not tell you that.

Q There is a lot of 30-inch pipe there and I am just trying to get a handle on it.

Q The pipe went through and just the sleeves were in that wall when they were pouring the wall.

Q You don't have any idea of what system?

A No, sir, I don't know what system it was in. It came out out of the auxiliary building.

Q Let me just try to spend a minute or two to see

if I can narrow it down because I said there is a lot of 30-inch pipe right around there.

A That is where I was told it went. I can't remember which system it was on.

Q You were told it went where?

A I was told that it came from the auxiliary building and it goes in where the steam generators were inside the reactor.

Q That is helpful. Do you remember what elevation this was?

A I said the fourth. I always try to work off of the personnel airlock.

Q Try to picture yourself there and looking at that flange. Can you give me some identifying characteristics, any other pipes or ---

A See, we didn't have any pipes. The only thing we would do is put the sleeves in and cutting out holes in the wall.

Q Okay. Let me see if I can make it easier. Let me give you a hypothetical. You are at this location. You have left your lunch there and you go outside to get a phone call. I am out there and you say Mike, would you run up and get my lunch. Where would you tell me to run to?

A At that time, the fourth or fifth level. It was

where the ceiling is. They had poured the auxiliary building ceiling coming up to the reactor, the first ceiling from the basement floor in there.

Q So it would be above or below the auxiliary ceiling?

A It would be the first pour they made. Where you could walk into the first airlock, there was a ceiling being poured maybe 30 feet up and you could jump off of there onto the pour they had made, which is probably the fourth or fifth level.

Q In this instance again you wrote an NCI. Well, no, you didn't. Beau passed your NCI and then you took it up to Larry and Larry said an engineer would be coming down. Who was that engineer?

A Probably the same one.

Q It would have been Dave Llewelyn?

A I expect so.

Q Was the flange on the reactor building side or the auxiliary building side?

A It was on the inside where the containment wall was, facing the containment wall.

Q So it was the inside wall as opposed to the outside wall?

end 18

A Yes.

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Q And was any welding inspector helping you on this one?

A Lindsay Harris.

Q Fourth item, the containment wall, the knuckle plates. You said the outside wall. That would be the outside of the liner; is that correct?

A The containment wall.

Q Between the annulus and the concrete?

A Yes, sir.

Q You said that NDE personnel came down. Who were they?

A I can't name names. It is hard enough to remember the inspectors' names.

Q Nothing rings a bell? Male or female?

A It was male. No females. Only one female. I think it was, the guy's name I believe was Jackie.

Q What did they find?

A They were just clearing it out to make sure everything was ready to weld. And once we get, we MT'd it, see you could pull, I believe you could pull an NDE on that before they weld on it.

Q Does Jackie Smith ring a bell?

A It might be.

Q You said you checked -- I just have a note that you checked with somebody what procedure should be

followed. Am I wrong on my note?

A We went to the office to check.

Q At the office you talked to Larry Davison?

A At fist I believe I talked to Beau. Beau said to document it to make sure it had a document on it in case you had to come back and somebody question you about it you would have a document on that part right there.

Q And then you went up to see Larry?

A He said --

Q He said there was nother way of handling it?

A Yes.

Q Can you recall what the other way was?

A It was a construction procedure, I believe.

Q CP22, CP --

A Whatever the minimum wall and the dip, whatever construction procedure that was. It has been a long time.

Q I appreciate that. We thank you for your time. Any welding inspector help you on this one?

A As far as writing the procedures up, no. We were together. We consulted on it.

Q Who did you consult with on this one?

A Same one, Lindsay Harris.

Q The airlock, you wrote an NCI, and then one hour later a welding engineer said you could weld,

said the welders could weld without preheating it. Who was that welding engineer?

A Dave Llewelyn.

Q Was there a welding inspector with you on this one?

A Yes. Lindsay Harris. While we were inspecting it he got told he would get his teeth kicked out if he didn't, he tried to stop the work on it.

Q Who told him that?

A The foreman.

Q Who was the forman? Baker?

A No, not that. This was when we were fitting it up.

MR. GUILD: Was this the same incident referred to in Mr. Beau Poss's notes? Did I show you a note of Mr. Ross's that had --

THE WITNESS: It had some in, maybe so. They threatened both of us on that. The welders threatened me, told me they were going to kick my rear end, but they used another word for it.

BY MR. MC GARRY:

Q Did that stop you from doing your work?

A It sent me up the hill after them.

Q But did you continue to do your work?

A Yes, sir.

Q Did the threats, was this the only example of a threat made to you?

A One that I took. The rest, they made some sarcastic remarks I just ignored.

Q Did any of these sarcastic remarks or threats cause you not to do your work?

A I tried to do as best I could.

Q The work that you did, do you feel you did it correctly?

A For what I knew, I did it correctly.

Q Stiffeners, the second stiffeners. All I have here is fourth level. Can you help me out?

A If you are talking about where the temperature --

Q That's right.

A It was up there, fourth level, around there. I guess it would be 180 around from the, just straight across from the personnel airlock.

Q And how many stiffeners are we talking about there?

A What they were welding on, only one. They started welding on one. That is when I stopped them.

Q You said you took your temperature gauge to determine the temperature of the plate or the ambient temperature.

REE19/5

A I stuck it up to the containment wall. I didn't put it on the stiffener because I checked the wall, the wall was the thickest part. And that is the, when you are welding, that is the one that will take the least, absorb the least amount of heat.

Q What was the temperature, do you remember?

A Less than 20 degrees. It had got down to about 12 degrees the night before that. The temperature had gotten down low.

Q And was there a welding inspector with you on this one?

A Just myself.

Q Where was Lindsay Harris?

A Following up in the rear. We worked together. I didn't really -- I asked him a lot of times.

Q Did you ask Lindsay on this one?

A I told him it was below freezing and he said, okay. And he said not supposed to be welding on it.

Q Falsification of records. Was an NCI written up on this to the best of your knowledge?

A Yes. There was an NCI written up on all of them.

Q Were there any other welding inspectors involved in this?

A What do you mean involved? They knew about it

OR WHAT?

Q No. Did this individual just come to you, or was Lindsay Harris with you or was Charles Crisp with you at that time?

A Charles Crisp was working over -- he was helping somebody in the auxiliary building or number 1 reactor that time. But he had been helping us. And when he came to me, I sent him to Lindsay. The welder came to me and I told him to go ask Lindsay what to do. I couldn't falsify it.

Q Do you know if he went and saw Lindsay?

A Yes, sir. Lindsay told him to go get Crisp, tell Crisp what he had done.

Q Did he get Crisp?

A Yes.

Q So Crisp knew about it and Harris knew about it. Anybody else know about it?

A After that we told him to go to the office and tell Beau. And it went on from there.

Q And he told Beau to the best of your knowledge?

A Yes.

Q Mr. Langley, you indicated that you thought you were missing some falsification of record cases. Do you remember saying that? You know one; that is the one

REE19/7

you shared with us. Do you know if there are any others?

A I can't directly point to any.

Q You think there were, but you don't know the facts of any others?

A See a lot of times when people were sick, I worked the reactor by myself, all the way from the top to the bottom, diesel generator. And I couldn't keep an eye on everybody. But I feel that if one did it, some more people would do it.

Q Let me put it this way: Get to the hearing and you will be testifying in the proceeding and there will be a falsification of records issue. To prepare ourselves, we will try to find out the facts of this incident. Do you expect that you will testify about any other incidents?

A No, sir. I couldn't swear to it.

Q Fair enough. The last one you have is prenotification of NRC inspections. How often did this occur that you found you had advance notice of either the NRC or ANI coming?

A Not very often. Maybe two or three times while I was there.

Q Did they come?

A Sometimes them white hats were there.

Q But did they com at about the same time as you had advance notice?

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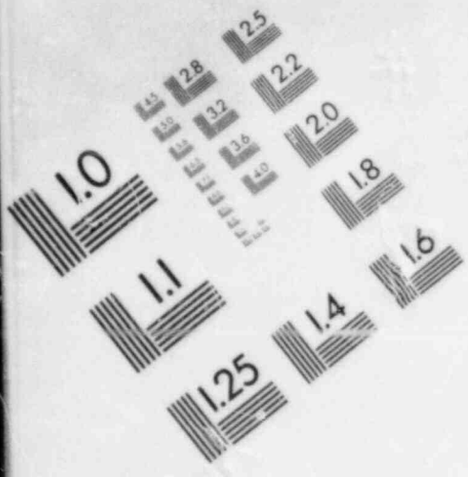

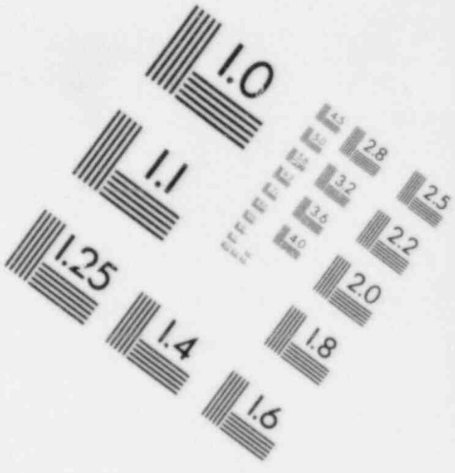

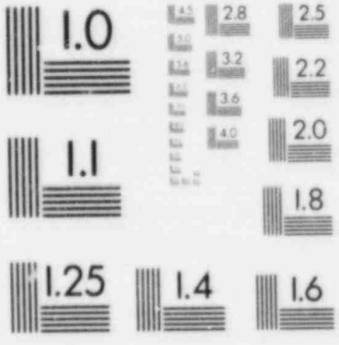

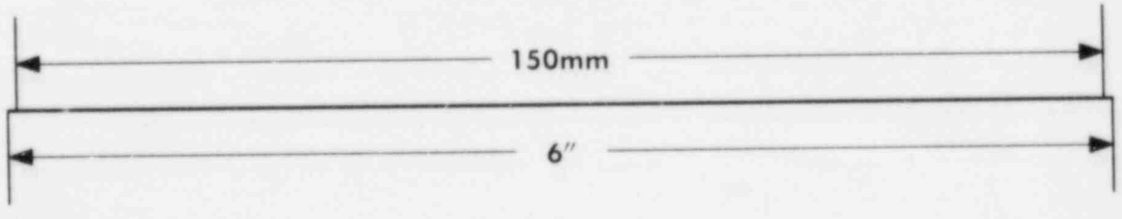

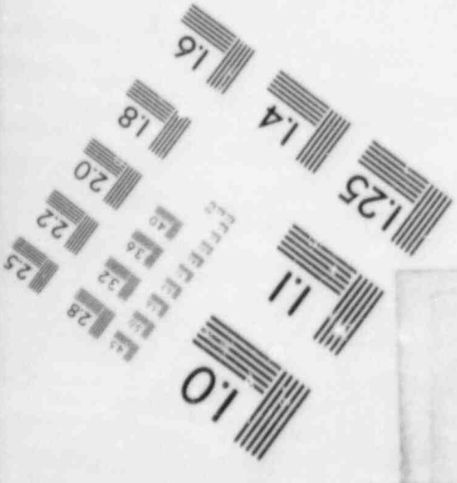

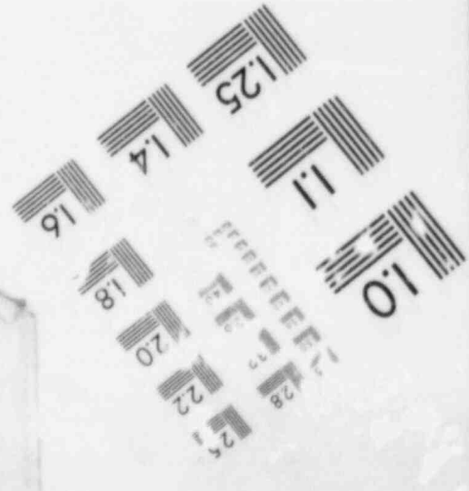

A Yes, sir.

Q Did they spend a lot of time with you?

A Not with me. They spent time on the job. Like I say, we always stayed away from them. I thought they were bad. That was my impression I was given.

Q I am curious. You were an inspector and what difference would it make to you if you had advance knowledge of an NRC or ANI inspector coming? You would just be doing your job regardless, wouldn't you?

A Probably so.

Q The last area. Our job today is to clearly set forth the examples, the specific concerns that you have. And you have given us eight, and we appreciate it. You also said though that these are just examples. And we would like to feel comforted when we walk out of this room that we know what your concerns are. So that, again, we get to the hearing, if indeed we do, we will be prepared for your eight concerns and we won't be surprised if you then said, but guess what, I have a ninth or tenth or eleventh concern.

A Without going back on the job, I could see things if I went back there. But as far as not being able to go back there, I guess that would be all I could tell you.

Q So these are the eight items you would

anticipate testifying on?

A Yes.

Q And you would not expect to testify to any other matters in this hearing?

A No, sir.

MR. MC GARRY: Thank you very much.

THE WITNESS: May I say something there? On the cheating on the test, I would like to make it clear that -- he asked me who gave us the oral test. Well, I can say one person that didn't give us the written test because we were with him a lot of times when the written test was slipped into our notebook. And I would like to make it clear that Mr. Ross was with us a lot of times during dinner. We had been going around with him. So I don't -- it couldn't have been him. I don't know who else, but he was with us. He gave us the oral test. I don't want anybody to think he gave us the other test.

MR. MC GARRY: I don't want anybody to think that either, Mr. Langley, or anybody else at Duke.

JUDGE KELLEY: Okay. Fine.

Mr. Johnson?

EXAMINATION

BY MR. JOHNSON:

Q I would like to explore first the test, the

answers to the test. What was the relationship between these tests that you were given and your passing the course, for example? These series of tests were given during the course you took to become a welding inspector?

A Yes.

Q Did the grades that you got in those exams that you had the answers beforehand count toward your final grade?

A Yes, sir. They were accumulated and added up. I guess they were divided by whatever number of tests you had taken and the final grade had to be at least an 80, 80 percent.

Q What portion of your final grade was accounted for from these tests that you had the answers for?

A You had to pass that before you could become certified.

Q Did you have a final exam?

A I believe so. We got from the second test on through we got the answers to every one of them.

Q Did you have a final cumulative exam at the end?

A I believe so.

Q Did you have the answers for the final cumulative exam?

A Yes. We got them every time, every test

we had after that.

Q So you got a final grade in this course based on a final written grade?

A Written.

Q You said written. What part of your final passing of this course was related to this written test that you said you had the answers to?

A I couldn't tell you that.

Q But part of the final passing was an oral?

A Yes, sir.

Q Was the oral exam a prerequisite to passing the course?

A You got a grade on the oral exam, too. I believe that was added into the other test.

Q So they were added together?

A All of it was added together and then you came out with an overall grade.

Q Based on all the written tests you took and the oral test?

A Yes.

Q The oral test that you took was administered by Beau Ross?

A Yes, sir.

Q How many questions were there?

A Ten or 15. He would show you different pieces of material.

Q 215?

A Ten or 15. I couldn't have stayed that long. They would have a piece of metal or a piece of pipe, and they would have a weld on it. And you would look at the weld. And he would ask you what would be wrong with it. Sometimes it would maybe have a crack. You were visually inspecting it, and they knew what was wrong with it. And they would get you --

Q Do you know whether the persons before you and the person after you were asked to look at the same welds?

A I couldn't swear to it.

Q So you don't really know whether the weld that you looked at, whether or not you told anybody about what you looked at, was the same weld that the next person looked at or the previous person?

A They would tell you certain pipes got this on and that on it, and it would be stainless or carbon freeze, two inches, different size. They would tell you what it was.

Q Who is they?

A The ones in front of you. I don't -- if I remember correctly, Crisp was the last one.

JUDGE KELLEY: May I just inquire of the

purpose of the detailed questioning by staff on this subject here tonight? I am not quite sure I see it. You are investigating the matter outside the case; is that right?

MR. JOHNSON: That is true.

JUDGE KELLEY: It has been outlined -- Mr. McGarry asked a series of questions. Do we really have to go into great detail on the testing matter tonight?

I would like to know why you think so.

MR. JOHNSON: On this particular matter, it seems to me that question of whether what Mr. Langley said to the next person or what the previous person told him, he sais they communicated, but it isn't clear that there was any significance to it.

JUDGE KELLEY: What is the significance of this level of detail and questioning is what I am asking. The hour is late.

MR. JOHNSON: Well, I will try to move on.

JUDGE KELLEY: Thank you.

BY MR. JOHNSON:

Q What was the relationship between your certification and the testing that went on? Was that a completely different element? In other words, you had the course and then you were certified and that was a completely different test for certification?

A No, sir. You had to pass school before you could be certified. If we went through school and didn't achieve an 80 percent grade, we didn't get a certification.

Q But was the certification just based on the course and the exams in the course?

A Yes, sir.

Q In general, with respect to the specific instances of problems that you said you wanted to write up as NCIs but which you were persuaded or told not to, the stiffener, stiffeners incident, the stiffeners being put on the reactor wall, the containment wall laminations, the airlock incident, the other stiffener work that had to do with preheat, was there anything about the final result of the welds that you believe made those welds unsatisfactory?

A Yes, sir. The airlock. If you didn't use heat on it, it might not crack at that certain time, but once you got some stress on it, it may crack at a later date.

Q But was there a final inspection?

A Yes, sir. We did a visual and RT'd. They x-rayed it.

Q And it showed acceptable?

A Well, it had to be repaired. It had cracks

and stuff in it.

Q After it was repaired, was it reinspected?

A It was repaired and it was inspected again.

Q So as far as you know, at the end of this process they were okay?

A Yes. It was x-rayed again. I think I was gone by that time.

MR. GUILD: His answer is he just doesn't know. I think he says he is convinced it was inspected again.

BY MR. JOHNSON:

Q With respect to the pre-notice of inspections, you say you heard that there were going to be NRC inspections in advance?

A Yes, sir.

Q But this didn't -- you didn't know whether the, what exactly the NRC was going to inspect, did you?

A No, sir. We knew they were going to be there.

Q Why did this follow, this welder who falsified the control sheet, why did he ask you to change the date rather than changing it himself?

A As I stated before, he was scared he would be fired. I guess he thought if I changed it, everything would be okay then.

Q What is the result of having the wrong pre-heater or having insufficient heat?

A Creates the metal to crack. If you don't keep an even temperature all the way around it, if you are welding over here, it will pull where you are not welding, the opposite side. It will make it pull in and it causes cracks.

Q On the weld that was related to the sleeve going through the, was it the containment wall?

A Concrete outer wall.

Q What was that weld retaining?

A When they poured the walls, they put sleeves in it because thepipes are not in place yet. And once they poured the walls, they don't have -- they put a sleeve in to keep from going back and cutting holes in the wall.

Q It is kind of a liner?

A Yes. It is a liner for a pipe to come through. And the pipe would be put up, put through the wall and it goes wherever it is going. It came out. We were standing on top of the auxiliary.

MR. BRYANT: That flange is in the containment building then?

THE WITNESS: No, sir. You know where the personnel airlock is on number two? You have been there. If you came in and went walking into the airlock and you looked over to the right, where you went down into the auxiliary building, okay. They pour the first floor, and

we would come off, go through the reactor, out into that place on top of the auxiliary.

BY MR. JOHNSON:

Q What kind of steel was --

A No pipe was through this, so I don't really know. The sleeve was carbon. It had to be carbon pipe coming through it with a carbon sleeve in there. Am I correct?

Q You said with respect to the lamination in the wall that the, that item was repaired?

A To my knowledge, it was.

JUDGE PURDOM: You said that the gouge was repaired. Is that right?

THE WITNESS: I believe everything was repaired. Yes, sir. I don't think you could let something go like that. Sooner or later it is going to be caught.

MR. JOHNSON: Okay. That is all I have.

MR. GUILD: I don't have anything.

MR. WILSON: Just a couple.

EXAMINATION

BY MR. WILSON:

Q Mr. Langley, I wasn't quite sure over on the testing matter, you said about the finding the answers in your book. Earlier in your comments you mentioned that Davison was your first instructor. He wasn't your only one, though, I gather from what you said later.

A No.

Q Who else were your written instructors or did they do both oral and written tests?

A Mr. Davison started, I guess.

Q On your instructors, did they give you both written and oral tests, or was an instructor involved only with, say, oral type of tests like Beau Ross?

A He was the only one on the oral. See the oral came at the end of all the written tests.

Q Two different phases?

A Well, it wouldn't be different phases. It was only one day of oral tests, and eight weeks, approximately eight weeks of written tests.

Q But over those written test periods, who was it who were you instructors?

A The first instructor was Mr. Davison. The second instructor was Mr. Baldwin, and the third instructor was Mr. Ross. Mr. Ross had us for the last, I would say, four weeks.

Q Did Mr. Ross give you any written test, too?

A Yes, sir.

Q All three of those people gave you tests, right?

A Yes, sir.

Q Written tests.

On the pre-notification of the inspectors'

visits, you said you got these in the mailbox. How long before the inspectors showed up did you get those notices? Was it the same day, two days, three days? What, do you remember?

A It was maybe a day or two before -- like I say, I am not saying they was the ones coming, but we would get notices to make sure whatever that was going to be inspected was right. And when they said the NRC was coming, they showed up.

Q Somebody came any way?

A Somebody came.

Q This notice that you got, the note that you mentioned, was it typed up and Xeroxed, or was it a hand-written note?

A Just a handwritten note.

Q Did you recognize the handwriting?

A No, sir, not really.

Q You worked pretty closely with Lindsay Harris, too. Did Mr. Harris get a similar note?

A I couldn't answer that. He will have to answer that.

Q You don't know if anybody else got that?

A No.

MR. WILSON: That is all, Mr. Chairman.

MR. CARR: May I ask one question. I am

confused. It is late. Have I heard you say that you did not know which inspectors were coming, ANI or NRC? You weren't sure?

THE WITNESS: On those little pads, it didn't have who was coming. It would just have a certain thing, but we knew when the white hats were coming. I will say that.

MR. CARR: Because of the note?

THE WITNESS: Not because of the note. This was entirely different. Your word of mouth told you that NRC was coming.

MR. GUILD: The note said what, what would the note say?

THE WITNESS: It would just have whatever was going to be inspected. What part; it would have the number of the part down.

MR. GUILD: Weld number?

THE WITNESS: Well, if it was a weld or whatever was going to be inspected. On those travelers, it would have an X outside on the hole point. That was, it had ANI, and something else on it, and they would have hole points on it. But these were different. These were just little papers like a three by five or something like that would have whatever.

MR. GUILD: What would you understand when you

got this note? What was it telling you to do?

THE WITNESS: Make sure it was right.

MR. GUILD: Make sure what was right. Give me an example of what it was.

THE WITNESS: If it had fitup on a certain one piece, like if you fit two pieces of pipe together, it would make sure the fitup was to specifications, within the limits.

MR. GUILD: Did you have any reason to believe thereafter that someone came and checked that specific thing that you were forewarned about, that fitup, for example?

THE WITNESS: Must have. I didn't stay around. I tell you that.

JUDGE KELLEY: Okay. When you said the white hats were coming, did you mean the NRC?

THE WITNESS: NRC white hats.

JUDGE KELLEY: Does that mean -- I will take it as a compliment. Does it mean the NRC and not the insurance guy or the State or somebody else? When you use the phrase, you mean the NRC?

THE WITNESS: We called the NRC the white hats. We knew they wore the white hats.

JUDGE KELLEY: What kind of hats does the NRC have?

THE WITNESS; Different hats. It had NRC. I believe it had NRC on it and the person's name usually was on the hat.

JUDGE KELLEY: So it's sort of a literal nickname?

THE WITNESS: Yes.

JUDGE KELLEY: Okay. Well, that seems to bring us -- we got a couple of things to do, but this as far as tonight's business -- that seems to do it.

First of all, Mr. Langley, our regrets. We haven't been able to get a handle on our schedule all week. It's been on again and off again for you. I appreciate your coming tonight. I expect we will be back in touch with you through Ms. Garde at some point in the next few weeks. I think I can speak for us in saying that this has been an unpleasant week, and we are all kind of tired.

The Board is going to try not to do this again. There was a good reason to get this work done this week. It's been pretty rough on everybody, especially I think the reporters have had a tough time. We are not going to do this again if we can possibly help it in this case.

Ten o'clock tomorrow morning. Same place. We would like as a first order of business to talk about the order of witnesses and that whole group of issues that we have alluded you to earlier. I gather we will certainly finish up with Mr. Ross tomorrow and hopefully the next person --

MR. MC GARRY: Mr. Godfrey.

JUDGE KELLEY: Mr. Godfrey. In view of it's being Friday, it seems if we can finish cross and get to Godfrey, we will not get beyond that. I don't think it's realistic. So you might want to not bother to bring these other two along. Is that all right?

JUDGE FOSTER: I am ready to turn in.

THE WITNESS: I would like to thank the Board and each one of these other participants for letting me testify.

JUDGE KELLEY: Well, we appreciate your coming.

THE WITNESS: Thank you.

JUDGE KELLEY: We are adjourned.

(Whereupon, at 9:45 p.m., November 10, 1983, the hearing adjourned until 10:00 a.m., November 11, 1983.)

CERTIFICATE OF PROCEEDINGS

This is to certify that the attached proceedings before the NRC COMMISSION

In the matter of: Duke Power Company, et al.
(Catawba Nuclear Station, Units 1 & 2)
Date of Proceeding: Thursday, November 10, 1983

Place of Proceeding: Rock Hill, South Carolina

were held as herein appears, and that this is the original transcript for the file of the Commission.

Ronald Graham
Mary Simons
Rebecca E. Eyster

Official Reporter - Typed

Ronald Graham
Mary C. Simons
Rebecca E. Eyster

Official Reporter - Signature