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

REGION III

Report No. 50-341/80-22

Docket No. 50-341 License No. CPPR-87

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, MI 48226

Facility Name: Enrico Fermi Nuclear Station, Unit 2

Investigation At: Fermi Site, Monroe, MI

Investigation Conducted: October 15-17, 21-23, November 3-7, 1980

Investigator: J. E. Foster — Date 1/28/81

Inspector: J. Shapker — Date 1/20/81

Reviewed By: C. E. Norelius — Date 2/2/81
C. E. Norelius
Assistant to the Director

D. H. Danielson — Date 1/30/81
D. H. Danielson, Chief
Engineering Support Section II

Investigation Summary

Investigation on October 15-17, 21-23, November 3-7, 1980, (Report No. 50-341/80-22)

Areas Investigated: Regarding allegations from several sources pertaining to improper disposition of nonconformances, deficient procedures, falsification of records, unqualified individuals, deficient documentation, and insufficient management support for QC inspectors; reviewed pertinent records, interviewed past and present personnel, and inspected equipment. The investigation involved 160 investigation hours onsite by two NRC personnel, and significant in-office review.

Results: Two items of noncompliance with NRC requirements were observed: (1) failure to provide a documented procedure; and, (2) failure to adequately identify material by heat number.

REASON FOR INVESTIGATION

Allegations from several sources, concerning construction at the Fermi 2 site were received primarily via Station WXYZ-TV, Detroit, Michigan. An investigation was initiated into those allegations which were sufficiently detailed to permit investigation and concerned items under NRC jurisdiction.

SUMMARY OF FACTS

From contacts with WXYZ-TV personnel and Individual "A" including an interview on September 6, 1980, a list of allegations sufficiently detailed to permit investigation was developed. Later contacts revealed that concerns relative to four Wismer and Becker Deviation Disposition Reports (DDR's) had been provided by another individual, and this was considered as a separate allegation.

The following allegations (from at least three sources) were investigated:

1. Wismer and Becker DDR's were improperly dispositioned.

2. Improper pressure was exerted on Individual "A" regarding DDR dispositions.

3. 80% of the plant's control and instrumentation tubing (non-electric) lines were installed without an installation procedure for the compression fittings utilized on the lines.

4. Three named individuals were not qualified for their positions.

5. A concern related to a coupling set screw on the "Emergency Evacuation Cooling Water pump" to motor coupling was never resolved.

6. Disposition of Wismer and Becker DDR's, 1216, 1217, 1218, 1219, which involved consummable insert material traceability, are improper.

7. Audits have indicated that documentation deficiencies and discrepancies exist in weld packages for systems built by the Ralph M. Parsons Company and by the Nooter Corporation.

8. Actions taken in response to the citation issued by the NRC relative to Wismer and Becker Purchase Order 63176 (Receipt Inspector Report 1715) were deficient.

9. A Wismer and Becker employee expressed concern over inadequate management support for field inspectors. This allegation was received separately from another individual.

These allegations were investigated during site visits, interviews, document reviews, and telephone contacts with former Wismer and Becker employees.

Allegations relative to DDR dispositioning, improper pressure, unqualified individuals and inadequate management support for field inspectors could not be substantiated by information developed during the investigation.

It was found that three instrument and control tubing lines, a very small percentage of safety-related lines, had been installed prior to development of written installation and acceptance criteria. Training of craftsmen performing this work had been conducted and documented, however. Development of the procedure has been completed. An allegation related to removal of a gauging requirement from the procedure could not be substantiated.

It was found that allegation five was related to the Emergency Equipment Cooling Water (EECW) pump. Because a memo concerning a set screw on the EECW had not been entered into controlled document status, assurance was lacking that the matter would be followed up. The memo and coupling were evaluated by the licensee during the period of this investigation and it was concluded no action was required.

Disposition of Deviation Disposition Requests 1216, 1217, 1218, 1219, was found to be acceptable. However, two errors were found in the insert material heat number tracking which was a part of the disposition for DDR's 1216, 1217 and 1218.

Previous site audits of documentation provided by the Ralph M. Parsons and the Nooter Corporation indicated deficiencies and discrepancies which require correction. Actions to correct identified problems have been initiated, but have not been completed.

Actions taken in response to a previous item of noncompliance appear proper, but will receive further review during future inspections prior to closing the noncompliance item.

DETAILS

1. Personnel Contacted

Detroit Edison

*T. A. Allessi, Director, Project Quality Assurance
*A. Benes, General Auditor
L. Combs, Assistant General Auditor
B. Bugnaski, Site Auditor
G. Carter, QA Engineering Director
C. Burkmyre, Audit Division
C. Cost, Instrumentation
*B. Everett, Project Supervisor
*W. Fahrner, Manager, Fermi 2 Project
*J. J. Gessner, Assistant Director
*E. Hines, Assistant Vice President, Quality Assurance
*J. R. Mullens, Welding Engineer
*S. Noetzel, Assistant Project Manager
*J. Nyquist, Acting Assistant Superintendent
*D. Spiers, Director Field Engineering
R. G. Ratoick, Engineering Assurance
*H. A. Walker, Supervisor Construction Quality Assurance

Daniel International

*J. C. Ard, Project Manager
*B. Dennehy, PQ Documentation Supervisor
*G. Kemmer, PQA, Auditor
D. Kelly, Welding Engineer

Wismer and Becker

*R. Abbott, Project Engineer
R. Eden, Engineer
J. Flaherty, Welding Engineer
C. Keller, Project Quality Manager
B. Kinney, Training Coordinator
*L. Osborne, Project Quality Manager
*H. Ramsey, Project Manager
*B. Wright, Project Service Manager

Individuals

Individuals "A" through "E"
R. C. Johnson, Consultant

Michigan Attorney General's Office

R. Coy, Assistant Attorney General

TV Station WXYZ

J. Davey, Attorney
M. Zeko, Producer

(In addition, 13 Wismer & Becker inspection personnel were interviewed.)

*Denotes those attending exit interview on November 7, 1980.

2. Background

The Detroit Edison Company began construction of the Enrico Fermi 2 Nuclear Power plant, an 1150 net megawatt, General Electric boiling water reactor, in October 1970. Construction activity was suspended in November 1974, due to financial difficulties, when the plant was approximately 45% complete. Construction resumed in February 1977. The plant is now approximately 80% completed.

The construction site is approximately 30 miles Southwest of Detroit, approximately eight miles Northeast of Monroe, Michigan. Detroit Edison is the architect-engineer for the plant overall, with Sargent and Lundy Engineers providing architect-engineering services for the reactor building. Daniel International Corporation replaced the Ralph M. Parsons Company as the constructor in July 1976.

Wismer & Becker is the site piping contractor, supplying both safety-related and non-safety piping and tubing.

In early 1980, a major reorganization of the site Quality Assurance and Quality Control functions took place.

3. Receipt of Allegations

On July 24, 1979, Region III received information relative to allegations that Receipt Inspection reports at Fermi 2 were deficient. These allegations (and others) were investigated during September 11-14, 1979 (See Inspection and Enforcement (IE) Investigation Report No. 50-341/79-18).

During January 21-23, 1980, and February 11-12, 1980, Region III investigated allegations received from the ABC television network concerning qualifications of personnel involved in small bore pipe support design work at Fermi 2 (See (IE) Investigation Report No. 50-341/80-02).

On February 22, 1980, Region III personnel contacted Michael Zeko, of television station WXYZ (Detroit, MI), relative to allegations at Fermi 2. Michigan state personnal had previously contacted Region III to advise of allegations from WXYZ concerning Fermi 2. Zeko did not provide allegations during this conversation but indicated that he would contact Region III at some future date. It appeared that allegations he had received pertained to the earlier investigations noted above.

The ABC network aired a segment related to the personnel qualifications allegations in early March, 1980. On March 21, 1980, WXYZ-TV aired a segment relating to allegations they had received.

On May 27, 1980, WXYZ sent a letter to Region III outlining 31 allegations they had received relative to construction at the Fermi site. Attached to the letter was a letter, an interview transcript, and various documents related to some of the allegations. Many of the allegations were either not sufficiently detailed to permit investigation, did not relate to matters under NRC jurisdiction, or pertained to allegations previously investigated. Several of the 31 allegations referred to the same subject.

Arrangements were made to meet with WXYZ-TV on August 19, 1980 to discuss the information supplied to Region III. As a result of discussions with Zeko, WXYZ-TV producer, it was concluded an interview with Individual "A", the principal source of information, would be beneficial.

An interview with indiviudal "A" was arranged so that WXYZ personnel could attend. This interview took place on September 6, 1980.

From information developed from discussions with WXYZ personnel and the above interview, six allegations sufficiently detailed to permit investigation were developed. An additional concern relative to documentation by the Ralph M. Parsons Company and Nooter Corporation was also considered as an allegation. (See Exhibit I). Also investigated was a concern received by Region III personnel relative to management support for field inspection personnel.

4. Introduction

Individual "A" worked for Wismer & Becker (W&B) in the Project Engineering Organization from November 20, 1979, until March 7, 1980. An Organization chart dated December 11, 1979 indicates he was assigned to a group responsible for technical engineering, DDR dispositions, surveillance responses, engineering training coordination, and technical resolutions. This group reported to the Project Engineer.

Individual "A" does not hold an engineering degree, and was not given signature authority to approve or accept technical decisions or work done. He did draft and propose procedures (and update old procedures) and for a limited number of DDR's he proposed dispositions. He also generated surveillance reports/responses to NRC citations. This work was reviewed by personnel with signature authority.

Individual "B", who provided information on DDR's 1216-1219, and documentation on Parsons and Nooter documentation deficiencies worked for Wismer & Becker as a Quality Control (QC) inspector. He left employment with the firm during April 1980.

Individual "C" previously made allegations concerning receipt inspection reports (See (IE) Investigation Report No. 50-34/79-18).

5. Allegations and Findings

Allegation 1: Individual "A" stated that he had been pressured to improperly resolve "Design Deviation Reports," and that others had improperly dispositioned DDR's.

He indicated that he had worked on from five to ten DDR's, and that Individual "D" had asked him to "white-out" and falsify dates on inspection reports referenced in DDR's. He stated he had visited the site with Detroit Edison personnel, and had shown a Detroit Edison Company (DECO) representative questionable DDR's.

Findings: Deviation Disposition Requests (DDR's) are a form utilized to identify and disposition nonconforming conditions. At the Fermi site, DDR's are processed according to Daniel Administrative Procedure AP-VII-02. Recent revisions to this procedure are as indicated:

Revision 5	May 10, 1979
Revision 6	January 8, 1980
Revision 7	February 4, 1980

The procedure provides a sequence of events: (See Exhibit II)

1. Identification of a nonconformance by a QC inspector.
2. Review by the QC inspector's supervisor (QC Manager).
3. A. Proposal of a disposition by contractor.
   B. Proposal of action to prevent recurrence.
4. Review of the proposed disposition, as appropriate to the nonconformance, by Daniel, DECO, Authorized Nuclear Inspector (Hartford Boiler Ins. Co.).
5. Verification of disposition actions, when accomplished.
6. Review of DDR packages and close-out.
7. Storage of documentation.

DDR's receive different number designations from the contractor and from Daniel, but are also cross-indexed. DDR's and supporting documentation are stored in the QC record vault. Although not required by NRC regulations, W&B maintains a file of draft DDR's.

From a review of site documentation, and statements by Individual "A", his involvement with DDR's was to do preliminary work such as weld documentation research, and provide a draft Field Proposed Disposition. Individual "A" did not have DDR signature authority to approve a Field Proposed Disposition. His work was reviewed, accepted, modified, or revised, by individuals having signature authority.

An attempt was made to identify draft DDR Dispositions developed by Individual "A". This attempt was hampered by the fact that he neither signed or initialed his draft Field Proposed Dispositions. However, seven DDR's were tentatively identified as those on which he worked. These DDR's were sent to Individual "A" and he confirmed that the printing was his. These DDR's are as follows:

Wismer & Becker DDR Number	Date Issued	System Code	QA Level **	ASME Code
1126	11/19/79	G41	III	3
1127	11/19/79	G41	III	3
1128	11/19/79	G41	III	3
1169	12/03/79	G11	III	3
1200	12/17/79	E21	I	2
1207	12/18/79	E11	I	1
1209	12/18/79	E41	I	2

** Levels II and III are not safety-related.

The final dispostion of DDR 1169 was as the draft proposed. The disposition for DDR's 1126, 1127, 1128, had been only changed editorially from those proposed in draft. The disposition for DDR 1200 had initially been drafted by Individual "A" to "use-as-is," but was changed to "cut out and reweld" and then changed back to "use-as-is." Dispositions for DDR's 1207 and 1209 had been changed from draft proposals to "cut out and reweld" to "use-as-is."

These DDR's were reviewed by Region III personnel. All final dispositions appeared acceptable (Level III systems are not required to meet NRC Quality Assurance Criteria).

Discussion with Mr. Lloyd Combs, DECO lead Auditor, indicated that he had contacted Individual "A" and had brought him onto the Fermi site on the afternoon of Saturday, April 19, 1980. Coombs stated that he had a security guard allow him and Individual "A" access to the W&B trailer.

Coombs stated that Individual "A" looked over a large number of W&B DDR's and questioned several dispositions. From Coombs' notes, the following Wismer & Becker DDR's were questioned:

Wismer & Becker DDR Number	Date Issued	System Code	QA Level	ASME Code
*715	08/27/79	P44	I	3
724	08/08/79	G33	I	1
732	07/26/79	P44	I	3
754	08/27/79	G11	II	3
766	08/24/79	T46	I	NA
**767	08/30/79	E41	I	2
770	08/27/79	E11	I	E
930	10/10/79	N21	I	1
***940	10/04/79	Various	NA	NA
956	10/12/79	P44	I	3
1459	04/01/80	N21	I	1
1477	04/08/80	C41	I	3

* Voided January 4, 1980, reissued as 1253 (Incorporated DDR 768).
** Voided September 17, 1979, reissued as DDR 823.

*** This DDR was voided and DDR's 1120, 1121 initiated. They were later voided and DDR's 1216, 1217, 1218 and 1219 were generated (See Allegation No. 6).

Dispositions for these DDR's were reviewed by Region III personnel and they appeared to be acceptable.

A review of the above DDR's appeared to indicate that the concerns later expressed to WXYZ-TV personnel were based on those DDR's reviewed during the site visit, rather than those Individual "A" had worked with in draft form. For example, DDR 770 pertains to a rod issue date which was prior to the issue of the backing ring for a weld, and this date problem was resolved by a statement from the foreman that the weld rod was used for temporary attachments for fit-up prior to performance of the weld itself. While a statement by Individual "A" suggests that the DDR includes a material incompatibility problem (carbon steel weld rod utilized in a stainless steel weld) the weld in question is on a carbon steel weld and the disposition of the DDR appears acceptable.

In addition to those DDR's noted, the investigation team reviewed all draft DDR's in the 1100 and 1200 series. Many of these DDR's pertain to documentation deficiencies disclosed during final weld package reviews prior to turnover of the systems to DECO. No deficient dispositions were identified during this review.

During a telephone conversation on December 20, 1980, Individual "A" stated that his concerns pertained to DDR's which he had not been given to disposition. He stated that the dates of inspections had been whited-out and changed, which had the effect of making it a falsified document. He also stated that he had objected to any changes to his draft field proposed dispositions and had refused to work on DDR's unless his dispositions remained unaltered.

Under the DDR system, falsification in the form of changing inspection dates to make them compatible with other recorded dates would result in a DDR being returned to the QC Department from the Engineering Department since the nonconforming condition which caused it to be initiated would now appear to be in error. This would result DDR's being voided because they were apparently initiated erroneously, that is, a nonconforming condition that did not exist.

Voided DDR's for the period of Individual "A's" employment were reviewed. Ten of W&B's welding-related DDR's had been voided during this period, with the majority (6) pertaining to missed hold points on repair welds. One DDR (W&B DDR 1234) pertained to an inspection date, and was later found to have been inadvertently voided. The DDR was re-initiated as W&B DDR 1306. All voided DDR's appeared to be appropriately dispositioned.

The Project Engineer was interviewed by Region III personnel. He stated that he had not requested Individual "A" to falsify any DDR data. He noted that there are occasions where a date or other information is legitimately changed due to error. Such changes should be initialed and dated, per Quality Assurance requirements.

Individual "D" was interviewed. He stated that he had not requested any date falsification. A voluntary written statement was obtained from Individual "D", a typed transcript of which is attached as Exhibit III.

B. Bugnaski, who accompanied Individual "A" and Combs on the visit to the site on April 19, 1980, was also interviewed, and his notes of that visit reviewed. Bugnaski indicated that Individual "A" had advised him that in some cases dates on DDR forms had been changed. The dates alleged to be changed were those in the Daniel/Contractor Engineer signoff blank (approval for field proposed dispositions).

It was noted that on some DDR forms, the above date did not follow the DDR issue date. However, no evidence of falsification was apparent. This issue was not pursued further, as the date in question has no impact on the acceptability of the DDR, or the quality of the completed item.

Discussions with W&B management personnel, and later interviews with QC inspectors, indicated that date discrepancies were the result of maintaining portions of the welding documentation away from the actual welding location. QC inspectors kept notebooks to document some inspections, and would copy information onto the formal record at some later date. Apparently, some inspectors would place the current date on entries made on the formal documentation, rather than the date of the inspection. The date discrepancy would not be noted until turnover package review, much later.

Region III personnel examined copies of inspectors notebooks, and confirmed the above conditions during interviews of QC inspection personnel. W&B management personnel stated that documentation practices have been revised to preclude this type of problem, and a daily audit of welding documentation enables prompt identification of improper dates or missed inspections, hold points, or other discrepancies.

W&B DDR's have been reviewed during previous NRC inspections (See (IE) Inspection Reports 50-341/79-20, 50-341/79-25, 50-341/80-01, 50-341/80-03). During the inspection documented in Report No. 50-341/79-25, all W&B DDR's for the period December 1978 - December 1979 were reviewed. Problems related to adequacy of corrective action to prevent recurrance, failure to observe hold points, and failure to stop work were identified during this inspection, resulting in three items of noncompliance with NRC requirements.

Disposition of DDR's was not identified as a problem area.

Individual "A's" former immediate supervisor (no longer with W&B) was contacted by telephone on two occasions. He did not substantiate the allegations regarding DDR dispositioning or date falsification.

No evidence was developed to show improper dispositioning of DDR's, or falsification of inspection data related to DDR's. No items of noncompliance with NRC requirements were identified.

Allegation 2: Improper pressures were exerted on Individual "A" regarding DDR dispositions during his employment, and he was paid to leave the state to silence his expressions of concern.

Individual "A" stated that he had been precipitously terminated following his refusal to falsify DDR data. Following his termination, he was paid relocation money to move from Michigan to Texas. In several statements, he indicated it was his opinion that this payment was meant to silence him.

Findings: As indicated in Allegation 1, no evidence was developed to show that improper dispositions of DDR's or falsification of DDR data had occurred.

Interviews with past and present W&B personnel indicated that Engineering Department personnel were motivated to accept welds whenever possible within applicable Code requirements. When Code acceptability could not be established, welds were removed. None of those interviewed felt that improper pressures had been exerted on those proposing dispositions. It should be noted that any improper dispositions would be reviewed by the other personnel in the DDR review process, including Daniel, DECO, and the Authorized Nuclear Inspector (representative of Hartford Steam Boiler, and site ASME authority) personnel. This process provides a high degree of assurance that dispositions which do not meet Code requirements are rejected and redispositioned.

A major reorganization of the site Quality Assurance responsibilities took place in early 1980 (See (IE) Inspection Reports 50-341/80-04, 50-341/80-05 and 50-341/80-06). The reorganization combined Daniel and DECO Quality Assurance personnel into one organization and caused various realignments of site personnel.

Discussion with W&B representatives indicated that they were directed by Daniel to reduce their personnel as a part of this reorganization. W&B records indicated that approximately 30 personnel terminated work at W&B in early March 1980. The majority of these personnel were absorbed by Daniel, or found positions within W&B elsewhere. Approximately five people were not hired by Daniel. Individual "A" was one of these personnel.

W&B personnel stated that Daniel had no previous knowledge of Individual "A" but that his background apparently did not meet their needs, and his poor attendance record may have influenced their decision not to hire him.

Individual "A's" former immediate supervisor, Stewart Crawford (no longer with W&B) was contacted. He indicated Individual "A" was not fired but was laid off during the noted reorganization (Individual "A's" personnel file indicates "lay-off" rather than firing). He indicated that Individual "A" was one of W&B's most newly hired personnel and therefore, most

likely to be a lay-off choice. He stated that Individual "A" had often complained that he had been "lied to by" W&B when hired, and that he had not wanted to write instructions or procedures.

W&B personnel records indicate that Individual "A" was advised of the reasons for his termination and of efforts to locate another position for him. An exit interview was conducted on March 7, 1980.

The exit meeting interview form indicates that Individual "A" expressed dissatisfaction at being terminated and stated, "The least minimum I expected was to pay my way back to Texas. This move is burdensome and I am going to have to appeal to Detroit Edison and the State of Michigan."

Discussion with W&B representatives and a review of personnel records indicated that Individual "A" contacted W&B management and obtained agreement to pay for his relocation move. During a telephone conversation with the Region III investigator on November 1, 1980, Individual "A" stated that W&B personnel offered to pay him after he moved and submitted a claim, and he had not accepted this offer out of distrust that they would keep their agreement.

W&B documents indicated that Individual "A" was given a payment exactly equal to the payment made to him for his move from Texas to Monroe, Michigan. Individual "A" did not return to Texas following this payment, but obtained another position in Midland, Michigan, on April 7 1980.

No evidence was developed to show that Individual "A" or others were improperly pressured to disposition DDR's, or that Individual "A" possessed information which the contractor would wish to suppress by bribery.

No items of noncompliance with NRC requirements were identified.

Allegation 3: 80% of the plant's control and instrumentation tubing (non-electric) lines were installed without an installation procedure for the compression fittings utilized on the lines.

Individual "A" stated that he had been assigned to write a procedure for installation and acceptance for instrumentation tubing (copper and stainless steel lines). He indicated that approximately 80% of this tubing had already been installed, in some cases very deficiently. He also stated that a crucial gauging section of the procedure had been removed by the W&B Project Engineer.

Findings: (See Exhibit IV). Chapter 7 of the Fermi Final Safety Analysis Report (FSAR) titled Instrumentation and Controls, describes the instrumentation and control system of Fermi 2. Section 9.3.1 describes the tests and inspections of this system, which are included in Section 9.3.1.4. Section 7.1.26 commits Fermi 2 to IEEE Standard 336, which is the standard for instrument inspection and testing requirements for instrumentation and electrical equipment during construction of nuclear power generating stations.

Instrumentation and control tubing at Fermi 2 is required to meet DECO Specification 3071-525 "Nuclear Class 2 and 3 small piping and instrument control piping and tubing." Section 10.2 of the specification addresses instrumentation and control piping and tubing. Nuclear Class 2 or 3 process or sensing lines are to be 5/8 inch outside diameter, stainless steel tubing of welded construction, and all or signal lines are to be either the above or 3/8 inch outside diameter stainless steel tubing with compression fittings. Copper pipe or tubing is not to be used on field installed safety-related or nuclear systems. Copper tubing has been used in some prefabricated panels, supplied from vendors offsite, and are used in nuclear systems. Class I systems do not utilize tubing.

An NRC inspector (J. Hughes) advised the licensee of the need for installation instruction and acceptance criteria for safety-related tubing during 1979. Site documents indicated that on September 7, 1979, DECO advised Daniel by memo that W&B required installation "instructions or precautions for installing the fittings. Since NRC inspectors have indicated their concern relative to adequate instructions in this area,..."

Daniel personnel replied by memo dated September 28, 1979 that the field had sufficient instructions in the proper installation and ongoing training was being provided and documented. The memo indicates that they felt these actions were adequate to insure the quality of the compression fitting installation.

On November 13, 1979, a training session was conducted by representatives of Parker Hannifin Corp., a compression fitting supplier. C. Johnson, a consultant hired to review the W&B training program (as part of the corrective action related to a previous NRC citation) attended this training session. Following the session, Johnson wrote an informal memo suggesting that a detailed procedure for compression fitting installation be written and documented.

During an NRC inspection conducted on November 27-29, 1979, inspector J. Hughes reviewed partially installed sensing lines (tubing) on Drawing 6WI-G11-70301-1, (level tap) and could not determine the acceptance criteria utilized (See (IE) Inspection Report No. 50-341/79-24). This was made an unresolved item (50-341/79-24-02).

On December 19, 1979, DECO letter F259-2117 (See Exhibit V) requested development of a written installation and verification procedure in response to the NRC unresolved item. The letter describes the general areas the procedure should contain, including a requirement for use of a "go-no-go" gauge.

A "go-no-go" gauge is a simple device commonly used in construction where a gauge is fabricated to the required dimension. The dimensions of the gauge are such that it can be inserted or withdrawn from a space which meets the dimensional requirement specified, and the gauge will not go into a space which is beyond the required dimension. Thus the gauge is termed a "go-no-go" gauge. On December 20, 1979, compression fitting training sessions were again held (one in the morning and one in the afternoon). Individual "A" attended the morning session.

Individual "A" was assigned to write the required compression fitting installation and acceptance criteria procedure. It was not possible to determine when this work was begun, since file information on the draft procedure is not dated. However, a route slip to Individual "A", dated January 5, 1980, sent the draft procedure back to him and requested changes to accommodate comments from the Project Engineer. Revision 0 of the resultant procedure, "Installation of Instrumentation Compression Type Tube Fittings," W&B procedure WB-C-132, is dated January 16, 1980. The procedure was approved by the W&B Project Engineer and Project Quality Manager. Section 9.2 "Seating and Alignment," Paragraph 9.2.1 provides that a "gauge or equivalent device as recommended by the manufacturers, shall be used...."

Revisions 2 and 3 of the procedure retain the same section, with the clarification that QC shall inspect 100% of QA Level I (safety-related) fittings and a random 10% check would be made on Level II and III fittings (See Exhibit VI).

The Project Engineer was interviewed by Region III personnel. He stated that he had not objected to the use of a "go-no-go" gauge, but may have wanted to fabricate an equivalent gauge rather than purchase a manufacturer's gauge.

Discussion with W&B and Detroit Edison personnel indicated that a large proportion of copper (non-safety related) instrumentation and control tubing had been installed. A very small percentage of safety-related stainless steel lines had been installed. These lines included the Heating, Ventilating, and Air Conditioning (HVAC) lines in the control room ceiling, and lines 6WI-G11-7029-1 and 6WI-G11-7030-1. These lines had not been QC inspected or accepted as of the time of investigation.

From documents reviewed, installation instructions in the form of manufacturer's recommendations, work orders, on-the-job training, and manufacturer's training sessions were provided. However, a full written instrumentation tubing installation procedure was not available for construction until September 18, 1980. This is in noncompliance with 10 CFR 50 Appendix B, Criterion V, which requires, that "Activities affecting quality shall be prescribed by documented instructions, procedures... of a type appropriate to circumstances." Unresolved item 50-341/79-24-02 is therefore upgraded to noncompliance (50-341/80-22-01).

No response to this item is required since actions (procedure development) have been taken to correct the noncompliance.

Region III personnel inspected the stainless steel HVAC control lines in the control room ceiling. Their installation appeared to be neat, orderly, and lines were well identified. Copper tubing lines, randomly installed, without support, were also observed. DECO personnel advised

that these were temporary lines intended for HVAC control to provide ventilation to the control room during construction, and had not been utilized.

Allegation 4: Three named individuals were not qualified for their positions. The Project Engineer does not have an ASME III qualification, which is required for his position.

Findings: Personnel folders for the named individuals plus one additional individual (Individual "D") were reviewed. All individuals appeared to have sufficient pertinent education and work experience to qualify them for their positions at the Fermi 2 construction site.

American Society of Engineers (ASME) does not have a Level III qualification, nor is a Level III qualification such as provided by other organizations, such as the American Society of Nondestructive Testing (ASNT), required for the position of W&B Project Engineer. ASME Section III is a boiler and pressure vessel Code entitled "Rules for Construction of Nuclear Power Plant Components," and pertains to nuclear welding.

Discussion with Individual "A" during a telephone call on December 20, 1980, indicated that he was not sure of this allegation, and that he had seen it mentioned in an "NRC Audit Report". A review of records indicated that this was related to IE Inspection Report No. 50-341/79-13, Citation No. 50-341/79-13-02. The citation did not relate to the Project Engineer, but was a violation of the contractor's Quality Control Manual, that the manual called for ASNT Level III Certification by the Corporate Quality Assurance and Control Manager. Contrary to this, site personnel had certified for an individual in two areas, RT (radiographic testing) and PT (liquid penetrant testing). These certifications had then been reviewed by the Corporate Quality Assurance and Control Manager.

DECO responded to the citations contained in the IE Inspection Report by letter dated July 12, 1979. The response was to recertify the individuals in question, and re-emphasize the certification procedure as contained in the QC Manual. This response was considered acceptable.

No items of noncompliance with NRC requirements were observed.

Allegation 5: A concern was expressed over a set screw utilized in an "Emergency Evacuation Cooling Water" pump. The concern was not addressed.

Findings: The Emergency Equipment Cooling Water pumps (EECW) are a part of the Reactor Building Closed Cooling Water System. This system is comprised of two redundant cooling loops as described in Section 9.2.2 of the Fermi 2 FSAR.

From discussions and a document review, it was found that during testing of the emergency hotwell supply pump, the pump disengaged from its coupling. A millwright noted that the EECW pumps had similar couplings, and suggested alternate methods of coupling. This information was given to the W&B Project Engineer.

Individual "A", by his statement, was given the task of organizing the millwrights' suggestions and preparing a letter for transmittal to Daniel under the Project Executive Manager's signature. A copy of the letter, W&B Serial Letter 2441-J dated February 12, 1980, was obtained (See Exhibit VII).

The letter contains two suggestions to consider if a review indicated a similar problem as in the hotwell supply coupling design. W&B personnel stated that no response was expected from Daniel, as the letter was meant to be informational only.

Site documents indicate that Detroit Edison personnel had investigated the letter during April 1980. A memo dated April 24, 1980, states that the EECW motors were already installed, but the pumps were still in storage. The pumps had been removed from storage, mounted, then returned to storage.

The above memo noted that the DECO site Mechanical Engineer had not been aware of any potential coupling problem concerning the pumps. DECO personnel failed at that date to locate any controlled documents related to the problem (controlled documents are entered into the Quality Assurance System). An uncontrolled copy of the memo had been retrieved earlier.

Daniel personnel advised DECO representatives that they planned to contact the pump vendor at some future date. No modification to the pump couplings had been made as of April 1980.

DECO personnel indicated that Field Engineering Memo (FEM), P-1762, dated April 30, 1980, was generated to identify and review the potential problem. The pump vendor was contacted and the EECW coupling design reviewed. DECO personnel advised that DECO engineers had reviewed the EECW coupling and concluded that no change was necessary.

The pumps have not been preoperationally tested at this time. Preoperational tests would be expected to indicate if a coupling problem exists.

No items of noncompliance with NRC requirements were observed.

Allegation 6: Dispositions of DDR's 1216, 1217, 1218, and 1219, which involved consumable insert material traceability, are improper.

These DDR's were provided to Station WXYZ personnel by Individual "B". During telephone contacts between Individual "B" and Region III personnel on December 2 and 3, 1980, Individual "B" stated that he had no concerns relative to these DDR's, and had provided them to indicate that the problem had been identified and controlled at the Fermi site.

Individual "A" was shown these DDR's during an on camera interview (date not provided to NRC). He stated that the dispositions were not acceptable.

Findings: A consumable insert is a ring of metal which acts as preplaced weld filler material, and becomes completely fused into the root of a welded joint.

From discussions and a document review, (See Exibit VIII for Chronology) it was found that DDR 940 was initiated when, during welding package review, it was found that for some welds, the heat numbers had not been recorded on the appropriate form (Sample Form EF 102 attached as Exhibit IV) by the rod crib attendant when consumable inserts had been issued. DDR 940 was one of those questioned by Individual "A" during a site visit on April 19, 1980 (See Allegation 1).

The applicable welding code, ASME Section III, requires traceability by heat number of welding materials up to the point of inclusion in a weld. The basis for this requirement is to assure qualified materials are utilized and enable removal or increased surveillance of welds made with materials if later found to be defective (heat of metal defective for some reason).

DDR 940 was later superseded by DDR's 1120, 1121 to separate affected systems, and these DDR's were later superseded by DDR's 1216, 1217, 1218, and 1219 to more adequately develop and track the required dispositions.

During early 1980, Individual "B" approached NRC inspector P. Barrett. Barrett states that he discussed traceability requirements and asked Individual "B" if an NRC welding inspector should contact him regarding his questions. Individual "B" refused this offer.

For the majority of the affected welds, the Material Release Form (EF 102) noted whether a stainless steel or carbon steel consumable insert had been utilized, but did not record the material's heat number. The disposition for DDR's 1216, 1217, and 1218 was to add a note to the weld documentation packages listing all of the material heat numbers which were available and could have been included in the weld. Heat numbers were developed from welding material documentation. The disposition of DDR's 1216, 1217 and 1218 was considered acceptable, although if any of the five carbon steel heats are found to be defective some time in the future, all of the welds involved will then be questionable.

Region III personnel reviewed a sample of affected weld packages to assure that the appropriate note had been added. Each package contained the note.

Material Certifications for each indicated heat were also reviewed. During this review, two errors were noted. The heat numbers for heat 716L65 had been transposed into 761L65, and a part number (MS-1-D-80) had been recorded in place of a heat number. Both errors were apparently carried forward from the draft DDR's. Although the heat number for part MS-1-D was on the DDR, it was easily missed.

These errors were considered as noncompliance with 10 CFR 50, Appendix B, Criterion VIII, "Identification and Control of Materials, Parts and Components" (50-341/80-22-02).

DDR 1219 was generated to disposition a small number (7) of welds where the type of consumable insert material, as well as material heat number,

had not been recorded on the material release form. The DDR reflects that three of these welds had been removed for other reasons, and one weld had not been completed, making the insert accessible. Therefore, three welds were left in question as to material compatibility (presence of a stainless steel insert in a carbon steel weld).

Two welds had been performed with an Argon purge, and were dispositioned to be examined by excavation to the weld root and etched with an acid (ammonium persulphate) which would indicate the persulfate of stainless steel.

One weld had been made without purge, and had an acceptable radiograph. From interviews with site personnel, it had been debated whether an excavation of this weld was necessary as the radiograph had been accepted. This debate apparently centered on the assumption that a weld made with a stainless steel insert, performed without use of a purge gas to remove oxygen contact during welding, would have significant oxidation, or "sugaring" of the weld root. The proposed disposition of DDR 1219 did not address excavation of this weld, Weld E21-3053-0W4. During the DECO review of the DDR, this disposition was determined to be insufficient, and excavation and testing of this weld was included in the final approved disposition.

DDR 1219 has not been closed, as the disposition has not been verified as completed. The approved disposition of DDR 1219 was considered acceptable.

Allegation 7: Internal Daniel Audits have indicated that documentation deficiencies and discrepancies exist in weld packages for systems constructed by the Ralph M. Parsons Company and by the Nooter Corporation.

These audit reports were provided to WXYZ-TV personnel by Individual "E". During telephone conversation with Individual "B" on December 3, 1980, Individual "B" stated that an unnamed individual had asked him to pass copies of the audits to media representatives.

Findings: As previously noted in the Background Section, Fermi 2 construction was suspended in November 1974. During July 1976, Daniel International replaced the Ralph M. Parsons Company as plant constructor. Site construction was resumed during February 1977.

W&B Serial letter 20-J, dated May 5, 1977, indicated that a review of Parsons documentation was in progress, several questions had arisen, and documentation deficiencies had been observed. However, the documentation was found to be "generally acceptable".

Daniel letter DIC9-5612, dated September 10, 1979, indicated that an indexing of Parsons records had revealed that Process Control Sheets and other documentation were missing or deficient.

Daniel letter DIC9-7304, dated October 29, 1979, (provided to WXYZ-TV personnel) provides information developed from a review of Parsons weld documentation for three systems (E11, E21, E41). In this letter, the lead QC Contractor Documentation Specialist expressed concern over the adequacy and accuracy of much of the documentation reviewed. (See

Exhibit X for letter and Attachment No. 2, delineating findings). Site records indicate that a meeting was held on the afternoon of October 19, 1979, to discuss the findings reflected in letter DIC9-7304, and plan corrective action.

A DECO memo dated November 1, 1979, titled "RMP Company Welding Deficiencies" (Exhibit XI), indicates that the Project QA Director had spent the day of October 30, 1979, discussing and reviewing DIC9-7304 with the lead Quality Control Contractor Documentation Specialist. The memo provides Edison QA department recommendations for resolution of discrepancies and for future reviews by Daniel personnel.

DECO memo EF2-47, 871 dated February 8, 1980, (Exhibit XII), indicates that W&B has responsibility for review and disposition of Parsons documentation deficiencies. Identification and disposition of deficiencies is to be via the DDR system where necessary.

Document Deficiency Notice (DDN) 517 reflects Parsons document deficiencies, and has not been closed. W&B personnel advised that their review and dispositioning will not be completed for some time.

DDN's 365 and 367 also relate to contractor turnover document deficiencies indicated during review of Parsons welding documentation.

DECO letter DIC9-3516 details reviews of Nooter documentation and responds to questions regarding Nooter Contract requirements. The letter indicates that the QA Department has completed its review of Nooter documentation, with 6,500 findings (deficiencies or possible deficiencies) and 1,800 documents not available for review. DDN's 412 and 413 documented these identified problems.

Edison letter EF2-46644, dated October 9, 1979, entitled "Documentation Required by Specification 3071-124 Refilling Pool Liner and Gates Work" responded to questions as to documentation required.

DECO personnel indicated that the responsibility for correction of Nooter documentation has been given to Daniel. DDN's 412 and 413 are still open, as of this date.

No items of noncompliance with NRC requirements were observed. However, this is considered as an unresolved item (50-341/80-22-03).

Allegation 8: Actions taken in response to the citation issued by the NRC relative to W&B Purchase Order 63176 (Receipt Order 1715) were deficient.

Findings: Following earlier telephone contacts, an individual alleged during an interview on September 11, 1979, that W&B had received and used safety-related piping without receipt inspection. This allegation, and others, were investigated during September 11-14, 1979. The investigation findings are documented in Inspection and Enforcement Report No. 50-341/79-18, dated October 16, 1979. One item of noncompliance with NRC requirements was developed, which substantiated the allegation that receipt inspection documentation was deficient in the specific instance alleged.

DECO responded to the citation by letter EF2-50, 644, dated November 21, 1979 (See Exhibit XIII). Commitments made in their response included a review of all Receiving Inspection Reports (RIR's), and the report log, and an inspection of warehouse stock to locate piping containing heat numbers associated with the two receipt inspections cited.

Site records indicate that an audit of receipt inspections had been completed by January 29, 1980. The audit identified numerous deficiencies in several generic areas (See Exhibit XIV).

The audit findings were formalized by Surveillance Report 849, dated March 6, 1980.

Memo LFC-002, dated August 26, 1980, documents a review of Receipt Inspection Reports Nos. 1 thru 5484, and the master log. This audit identified a number of RIR's as missing, and other deficiencies.

Memo LFC-016 dated September 25, 1980, indicates that many of the above deficiencies had been resolved through research and review of other files. The memo indicates that a number of missing RIR's could not be located and these deficiencies were still not resolved or dispositioned.

These actions appear to address the citation and the commitments made by the licensee regarding an audit of the system. As corrective actions are not yet complete, this will remain an open item (50-341/80-22-04).

Site records also reflect that a "total receiving inspection" was performed on the pipe covered on RIR's 1715 and 1741. None of the piping in question was located in nuclear stock. 181 lengths (approximately 3620 feet) of the 3/4" pipe was found in non-nuclear (ASME B31.3 Code) stock. 41 lengths (approximately 820 feet of this pipe was of the heat number traceable to RIR 1715). Under the Fermi 2 QA program, RIR's are not generated for piping utilized in applications covered by the ASME B31.3 Code.

No items of noncompliance with NRC requirements were observed.

As noted, one item will remain an open item for later inspection.

Allegation 9: A W&B employee expressed concern over inadequate management support for field inspectors.

In June 1980, several contacts were made with a W&B employee who indicated he felt he was receiving inadequate management support and was actually harassed for being overly strict in his inspections.

Findings: On September 10, 1980, Region III personnel interviewed this individual. Individual "E" stated that he had not accepted any nonconforming items, but felt that certain actions by W&B had been taken against him as his inspections were too exacting. The individual recounted several incidents where he felt he had received insufficient management support when construction personnel had complained about his actions.

Individual "E" was interviewed by the investigation team. He stated that he felt that conditions had improved somewhat, but still needed improvement. He recounted instances where construction personnel had made complaints regarding his behavior. These complaints had been made not to his immediate supervisor, but to W&B management personnel. The instances recounted did not appear to be unusual incidents, nor signficant disputes.

During November 6-7, 1980, the investigation team interviewed 13 W&B inspectors for various disciplines. Long-term, recent, permanent, and semi-permanent (job shopper) personnel were included in this sample.

In general, those interviewed indicated satisfaction with W&B. Some typical problems were expressed, but they did not appear unexpected nor significant. Several inspectors noted that their job assignments had recently been changed, as more people were being assigned to system walkdown inspections as systems are completed.

Several inspectors noted past problems which had been resolved, and expressed their opinion that the job situation had improved.

None of those interviewed indicated that they had accepted, or been pressured to accept any nonconforming conditions during their inspections.

One inspector stated that construction personnel had sometimes complained to W&B management personnel when their complaints should have properly gone to an individual's immediate supervisor.

No items of noncompliance with NRC requirements were observed.

6. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item disclosed during the investigation is discussed in Allegation 7.

7. Exit Interview

On November 7, 1980, an exit interview was held with licensee and contractor representatives. The allegations investigated, and investigation findings were presented by the NRC investigation team. The investigation findings were acknowledged by licensee personnel.

Attachments: Exhibits I-XIV