DOE/ID-10175-2
November 1987

Weld Evaluation Project Formation of Homogeneous Groupings of Welds

Department of Energy
Weld Evaluation Project
TVA Watts Bar Nuclear Plant Unit 1

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Idaho National Engineering Laboratory

U.S. Department of Energy • Idaho Operations Office

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DOE/ID-10175-2
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WELD EVALUATION PROJECT
FORMATION OF HOMOGENEOUS GROUPINGS OF WELDS

DEPARTMENT OF ENERGY
WELD EVALUATION PROJECT
TVA WATTS BAR NUCLEAR PLANT UNIT 1

Susan M. Bradford

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ABSTRACT

The United States Department of Energy/Weld Evaluation Project (DOE/WEP) was formed in December 1985 as the result of an interagency agreement between the DOE and the Tennessee Valley Authority (TVA). The project was assigned by the DOE to EG&G Idaho, Inc., for implementation. The DOE/WEP was tasked to perform an independent evaluation of the documented TVA welding program and the as-constructed weld quality with respect to the TVA-performed safety-related welds at the Watts Bar Nuclear Plant Unit 1 (WBNP-1). This is one of ten reports describing the plan, processes, implementation, and results of the DOE/WEP at the plant. This report describes the process of forming weld groups for evaluation and the resultant groupings of welded components. The formation process involved reviewing (a) potential weld problems identified by employee concerns and quality indicators, (b) weld program documented requirements, and (c) the construction implementation process. Ninety-seven original groups of welded components were formed as a result of this review to evaluate the quality of completed welding. Additionally, 18 new groups were formed (during and after the evaluation of the original groups) to address other identified or potential problems.

ACKNOWLEDGMENTS

Acknowledgment is extended to the participants in the group development process, which is a part of the Department of Energy/Weld Evaluation Project (DOE/WEP) at the Tennessee Valley Authority (TVA) Watts Bar Nuclear Plant Unit 1 (WBNP-1). In particular, acknowledgment is made of the contribution to the group development process by A. Earl Bradford, C. Dana Cooper, Steven W. Forcey, L. A. (Mick) Gray, Terry Parcell, and Herbert Richardson.

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WELD EVALUATION PROJECT FORMATION OF HOMOGENEOUS GROUPINGS OF WELDS

1. INTRODUCTION

The United States Department of Energy/Weld Evaluation Project (DOE/WEP) was formed in December 1985 as the result of an interagency agreement between the DOE and the Tennessee Valley Authority (TVA) to provide the TVA with an independent assessment of the quality of safety-related welding performed by the TVA during construction of the Watts Bar Nuclear Plant Unit 1 (WBNP-1). The DOE/WEP was conducted by EG&G Idaho, Inc., as contractor to the DOE.

The specific objectives of the DOE/WEP were to:

1. Assess compliance of the TVA's documented weld program to the requirements in the WBNP Final Safety Analysis Report (FSAR)[1] and amendments through February 1, 1986.
2. Assess applicable TVA employee concerns (ECs) and quality documents to determine if they identify quality problems with the TVA-performed, safety-related welds.
3. Evaluate the TVA's as-constructed plant weld status by conducting an examination of the plant welds, evaluating the results, and when deviations[a] were determined to be unacceptable, analyzing and concurring with the TVA's corrective action proposals for these deviations.
4. Provide the TVA with a statement of the compliance of the plant welds with applicable construction welding codes.

This is one of ten reports describing the plan, processes, implementation, and results of the DOE/WEP at the WBNP-1. The assessment to meet Objective 1 was accomplished with the completion of the report, "Weld Program Review."[2] The other eight reports are listed as References 3 through 10. These reports describe the program organization and work scope, the formation of a weld/component data base, data bases for weld reinspection results and status reports, the processes of component inspection and examination, suitability for service evaluation engineering, the generic problem analysis of deviations found during the examinations, and an aggregate assessment of weld reinspection results and a final summary.

The plant components were separated into homogeneous groups, to identify and categorize suspected weld quality problem areas and to accommodate the weld/document review. Each group was assessed by the method that would most appropriately evaluate the welds associated with the group area and the problem that the group was formed to address. An assessment plan was prepared to direct the evaluation process of each group of welds. The evaluation was performed by document review, engineering evaluation, examination, or a combination of these methods. If suspected weld quality problems could be associated with specific plant components, those components were evaluated; otherwise, statistical sampling methods were used to determine which components in the homogeneous group would be evaluated.

For structures, a component was defined as a logical assembly of parts that have a common function. Examples of structural components are pipe supports and hangers, ladders, platforms, and structural members identified on the TVA drawings by detail or mark number. For piping, a component was defined as a welded joint. Homogeneous groups were defined as groups of components that were evaluated as having common weld quality.

The original groups were developed from employee concerns, quality documents, and all the TVA-performed, safety-related plant welds. During the course of the evaluation, additional data and analysis of the evaluation resulted in the formation of expanded and/or rebounded groups. Additional groups were evaluated in the same manner as the original groups (by examination, document review,

a. *Deviation* or *deviant weld* denotes a condition that does not meet the applicable code inspection acceptance criteria for the weldment specified by the engineer. These terms are used before an evaluation of the condition has been performed in accordance with other applicable code provisions to determine the acceptability of the condition.

etc.) only to the extent necessary to resolve the issue for which the new groups were formed.

Sections 2 and 3 discuss the employee concerns and quality indicators, respectively. The general overview of plant welding quality is presented in Section 4. Group consolidation and a summary of group formation are presented in Sections 5 and 6, respectively. Appendix A contains the applicable DOE/WEP Standard Practices. The Master List of WEP Employee Concerns is contained in Appendix B. Appendix C contains the master listing and method of evaluation for WEP identified homogeneous groups.

2. EMPLOYEE CONCERNS

A source for the formation of several groups to isolate suspected quality problem areas were the TVA employee concerns. These concerns were as transcribed by the Quality Technology Company (QTC), an independent agency subcontracted by the TVA to interview the concerned TVA employees. Copies of the concerns were provided to the DOE/WEP for evaluation. The DOE/WEP also received additional information from QTC, not stated in the transcribed concerns, as clarification for the DOE/WEP's interpretation of the concern. The concerns were grouped by the nature of the indicated problem into the following categories:

- Welder Certifications
- Inspector Certification/Qualification
- Weld Filler Material Control
- Parent Metal Problems
- Documentation/Falsification
- Workmanship/Specific Weld Problems
- NDE Process/Procedure
- Weld Process/Procedure
- Other Weld Quality Problems.

The concerns evaluated by the DOE/WEP were those that fell within the following parameters:

- Concerns related to welded systems or components that are safety-related, as defined by the TVA WBNP FSAR[1] and the implementing TVA drawings and specifications
- Concerns identifying nonsafety-related welding problems at WBNP-1 that can impact safety-related welds
- Concerns associated with problems that imply a violation of the welding program requirements invoked by the TVA WBNP FSAR and the implementing TVA drawings and specifications
- Concerns associated with the TVA's welding program and welds fabricated by the TVA
- Concerns identifying both nonsafety-related and safety-related welding problems at WBNP Unit-2 and the other TVA nuclear plants, which indicated problems with the TVA general welding program, and could have had an impact upon the TVA safety-related welding performed at WBNP-1.

Approximately 5400 TVA employee concerns are listed on a TVA employee concern "master list". These include all the concerns compiled by the QTC. The DOE/WEP received 606 employee concerns as being "welding related," from the TVA. An independent statistical review of the 5400 concerns was performed by the DOE/WEP to ensure that all employee concerns related to welding had been supplied to the DOE/WEP. This review confirmed that the welding concerns were in the DOE/WEP data base.

The "Master List of WEP Employee Concerns" (Appendix B) (a) defines the categories of the 606 employee concerns received by the DOE/WEP as of July 2, 1986 (the final date that the TVA had transmitted the concerns to DOE/WEP), (b) identifies the concern to the group in which it was placed, (c) indicates the location (WBNP-1, WBNP, WBNP-2, or other plant) of the concern, and/or (d) specifies if the concern is not applicable to the DOE/WEP.

The employee concerns were placed within groups for evaluation based upon the detail provided with each concern. The classifications are:

- Specific Group—a group formed to address a problem that could be isolated to a specific component or group of components.
- Special Group—a group formed to address a specified problem that could not be isolated to specific components, but could be isolated to a certain type of component, configuration, area, system, etc., where quality could be assessed statistically.

Some concerns lacked sufficient detail to isolate the concern to a problem area and therefore, were answered by the results of the general plant overview, as explained in Section 4 of this report.

The DOE/WEP established a numbering system to identify the specific and special groups. Each group was assigned a unique number: 1 through 36 was designated for specific groups and 201 through 266 for special and expansion groups. (See Reference 4 for an explanation of the population definitions and data base validation techniques.)

3. QUALITY INDICATORS

A second source of groups formed to address possible weld quality problem areas were quality documents. The term "quality indicator" was created by the DOE/WEP after a review of quality-related documents that were written during the construction of WBNP-1. The DOE/WEP chose to evaluate these documents as they were a source of information about possible weld problems in the plant and/or that might have aided in resolving the employee concerns associated with welding. The documents reviewed by the DOE/WEP were:

- Nonconforming Condition Reports (NCR)
- Special Inspection Service (SIS) Reports
- United States Nuclear Regulatory Commission (USNRC) Enforcement Items
- 10 CFR 50.55(e) Reports
- Quality Assurance (QA) Audits
- Discrepancy Reports
- Allegations Reported to the USNRC
- Conditions Adverse to Quality Reports
- Nuclear Safety Review Staff (NSRS) Reviews
- Office of Engineering (OE) Audits (concerning welding)
- Corrective Action Reports (CAR)
- Stop Work Orders (SWO)
- Institute of Nuclear Power Operations (INPO) Reports
- Black & Veatch Report
- Compilation and Summary of Quality Review
- Quarterly and Annual Assessment of the QA Program for Construction of WBNP
- Construction Project Evaluation
- Overall Constructor QA Program Assessment Report.

Approximately 8000 documents were reviewed by the DOE/WEP.[a] About 3000 were found to be weld related. Table 1 provides a summary of the quality documents review.

The quality documents were assessed to determine if:

- The disposition of the nonconformance was in accordance with the applicable code
- Adequate evidence of the completed disposition was provided
- They did not indicate an adverse trend
- Any use-as-is dispositions included adequate technical justification.

The quality documents that appeared not to meet the above criteria were interpreted by the DOE/WEP as suspect welds or potential generic problems. As a result of this information, 134 quality indicators were identified and several groups were formed for evaluation. These groups were then classified as specific or special, the same as the groups formed from employee concerns.

The "Weld Program Review"[2] was established to ascertain if there were areas or phases of the TVA weld program that had not incorporated programmatic requirements from the applicable codes and standards. If such an area or phase had been found delinquent in the requirements, a group would have been formed, if appropriate, such as those driven by employee concerns or quality indicators. None were found and, therefore, no groups were formed from this source.

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a. The reports are listed in the Master List of Quality Indicators Reviewed by DOE/WEP, January 13, 1987.

Table 1. Summary of quality document review by the DOE/WEP (revised January 1987)

Items	Total Reports Reviewed	Weld-Related Items	Quality Indicators Identified	Evaluation Groups Formed
NCRs				
Construction	6508	—	—	—
ENDES	156	—	—	—
Nuc-Power	360	—	—	—
Sub Total NCRs	7024	2686	121	30
SIS Reports	118	46	—	—
NRC Enforcement Items	97	57	6	4
10 CFR 50.55(e) Reports	62	34	1	1
QA Audits	120	79	—	—
Discrepancy Reports	357	33	—	—
Allegations reported to USNRC	9	7	—	—
Conditions Adverse to Quality	31	31	—	—
NSRS Reviews	15	15	1	1
OE Audits (concerning welding)	92	31	—	—
Corrective Action Reports	21	21	4	3
Stop Work Orders	3	3	—	—
Individual Reports	8	8	1	1
Totals	7957	3051	134	40

4. GENERAL OVERVIEW OF PLANT WELDING QUALITY

To investigate the general plant welding quality (general overview) and to determine if there existed major safety-related concerns that may not have been identified by the employee concerns or quality indicators, the DOE/WEP formed general groups. A general group was a logically bounded division of the total population of welded components, limited to the TVA-performed, safety-related welds in WBNP-1. The boundaries of the general groups were established considering the following:

- Welding personnel and organization
- Inspection personnel and organization
- Welding codes
- Welding procedures
- Inspection procedures.

The plant components were separated into three major categories (piping, structural, and heating, ventilating and air conditioning [HVAC] ductwork). Procedural requirements and inspection/nondestructive examination (NDE) requirements vary according to the governing codes of these three categories. The general groups were designated alphabetically by the letters A through M, as described below.

Pipe welds were subdivided by code—American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section III and ANSI B31.1 and B31.5. The difference between ASME and ANSI codes are the: (a) documentation required for certification of systems, (b) extent of inspection required, and (c) acceptance criteria.

The ASME welds were further divided by pipe size (large bore and small bore). Large bore pipe welds, designated by the letter B, have a nominal diameter larger than 2 in. Small bore pipe welds, designated by the letter A, have a nominal diameter 2 in. and smaller. The large and small bore divisions were made because of the differences in weld type (groove weld versus fillet weld), ease in welding, and welder qualification requirements.

The ANSI B31.1, B31.5 pipe weld group was designated by the letter C. Due to the similarity of B31.1 and B31.5, and the type of piping associated with the two, one group was formed to include all the ANSI piping.

Structural welds were governed by the American Welding Society (AWS) code. The AWS structural welding uses the same process and acceptance criteria throughout, but the TVA craftsmen and inspectors followed the welding activities by discipline. Therefore, the structural welds were subdivided by discipline into their respective groups:

- D, E—Civil/structural
- F—Piping systems hangers and supports
- G, H—Instrumentation hangers and supports
- I, J—Electrical hangers and supports
- K, L—HVAC system hangers and supports.

The structural groups were further divided into two time periods, as shown in Table 2. This time-period division reflected a quality control reorganization within the TVA. A quality control unit originally reported to each engineering discipline—civil, piping hangers, etc. Quality control was then reorganized so that each unit no longer reported to the disciplines, but directly to Quality. The procedures were then changed to reflect the quality control reorganization. The piping systems hangers and supports were all reinspected after the organizational changes were in effect, so these welds were reasonably expected to exhibit uniform quality.

General Group M was formed to evaluate the heating, ventilating, and air conditioning (HVAC) ductwork. The reasons for evaluating the ductwork were the lack of quality assurance documentation associated with the verification of welding activities, and the use of a leak-rate test/check in lieu of visual inspection of the ductwork weldments. The DOE/WEP engineering evaluation of the HVAC ductwork was communicated to the TVA.[a] The TVA elected to perform a reinspection and retesting of the safety-related HVAC systems and removed this effort from the DOE/WEP workscope.

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a. Letter from F. C. Fogarty to R. E. Kosky, "Heating, Ventilation and Air Conditioning Ducting Weld Quality Evaluation," FCF-114-87, October 30, 1987.

Table 2. Original general group categories formed for overall evaluation of as-constructed plant welds

Piping				Structural					
					Supports				
ASME small bore	ASME large bore	ANSI B31.1, B31.5	Time frame	Civil	Pipe	I&C	Electrical	HVAC	HVAC duct
A	B	C	1986	D	F	G	I	K	M
≤ 2 in nominal pipe size	> 2 in nominal pipe size								
			Feb. 1981						
			1973	E		H	J	L	

Notes:

1. Time frame division indicates a change in the organization that inspected the welding, and other weld program changes implemented by the TVA in this time frame to upgrade construction welding. The changes could potentially have affected the homogeneity of weld quality.

2. A through M indicated DOE/WEP designation of the general groups.

5. GROUP CONSOLIDATION

The specific, special, and general groups were developed considering the following, as appropriate:

- Developing these groups should maximize the isolation of welds or components associated with each suspected problem
- Consolidating these groups with common component populations should maximize the number of problems addressed by each group.

Employee concerns that identified the same or closely related potential quality problems were consolidated into one group that would address the issue. Quality indicators that identified the same or closely related potential quality problems were consolidated into one group that would address the issue. For example, there are 134 quality indicators identified to be DOE/WEP applicable (see Column 3, Table 1). From these quality indicators, 40 groups were formed (Column 4, Table 1). Also, groups were formed to address employee concerns and quality indicators identifying the same or closely related quality problems. This minimized any duplication of effort, e.g., examining the same weld twice.

Specific groups were excluded from any special or general group. The general groups were nonoverlapping. Some special groups overlapped into two or more general groups, or there group boundaries coincided with some general group boundaries. In the case of coinciding, that special group was evaluated using the results of those general groups. Results from the evaluation process of general groups were used to address problem areas in some specific or special groups, as the general group reinspections included all attributes of interest required to assess the special groups.

6. SUMMARY OF GROUP FORMATION

The DOE/WEP evaluated the WBNP-1 TVA-performed safety-related plant welds by dividing those welds into groups. Specific and special groups were formed from the TVA employee concerns and quality indicators to isolate suspected quality problem areas. The overall plant weld quality was measured by the general plant overview through evaluation of general groups. After defining the problem areas and consolidating like items, 97 original groups were formed:

- From the employee concerns, a total of 44 groups were formed—17 specific groups and 27 special groups
- From the quality indicators, a total of 40 groups were formed—19 specific groups and 21 special groups
- From the general plant weld quality overview, 13 general groups were formed.

A total of 18 new special groups were formed as a result of the evaluation process (by Generic Problem Analysis or Project Procedures[8]), as a result of additional data compiled at the completion of the TVA data base verification process (Reference 4) or as a result of a special request made by the TVA.

The "Master Listing and Status of WEP Identified Homogeneous Groups" (Appendix C) is a complete listing, updated as necessary, of the groups formed for evaluation. Each item, listed by group number, is defined by a summary of the problem, the proposed method of evaluation, and reason for the group formation area.

7. REFERENCES

1. *Tennessee Valley Authority Watts Bar Nuclear Plant Final Safety Analysis Report*, and amendments through February 1, 1986, Tennessee Valley Authority, Chattanooga, TN.

2. W. H. Borter, *Weld Program Review*, DOE/ID-10152, December 1986.

3. S. M. Bradford, *WEP Organization and Work Scope*, DOE/ID-10175-1, November 1987.

4. J. M. Savage, *WEP Safety-Related Weld/Component Data Bases*, DOE/ID-10175-7, November 1987.

5. D. A. Armour, *WEP Component Inspection and Examination Process*, DOE/ID-10175-4, November 1987.

6. De Lon 'H' Gardner, *WEP Data Bases for Weld Reinspection Results and Status Reports*, DOE/ID-10175-3, November 1987.

7. R. K. Blandford, *WEP Suitability for Service Evaluation Engineering Process*, DOE/ID-10175-5, November 1987.

8. L. C. Brown, *WEP Generic Problem Analysis Process*, DOE/ID-10175-6, November 1987.

9. L. C. Brown and R. J. Wade, *WEP Aggregate Results of Weld Assessments*, DOE/ID-10175-8, November 1987.

10. F. C. Fogarty, *Weld Evaluation Project Final Report*, DOE/ID-10175-9, November 1987.

APPENDIX B

MASTER LIST OF THE DOE/WEP EMPLOYEE CONCERNS

MASTER LIST OF

WEP

EMPLOYEE CONCERNS

Date: September 29, 1987

Approved: A.E. Bradford Date: 9/29/87

APPENDIX B

MASTER LIST OF THE DOE/WEP EMPLOYEE CONCERNS

INSTRUCTION

The Master List of WEP Employee Concerns presents, by category and descriptive heading, the problems identified in Employee Concerns and transmitted to the Department of Energy (DOE) Weld Evaluation Project (WEP) for evaluation, and provides an index of all Employee Concerns evaluated by DOE/WEP. The document is described in the following paragraphs.

Category/Description

The nine categories, CRV 01-09 (indicating Concern Review number), are divided into subcategories, all of which are derived from the Employee Concerns.

Index

The index lists all employee concerns received by WEP and indicates (by which column the second alphanumeric is placed) the location of the alleged problem and whether WEP has determined the concern to be appropriate for WEP evaluation. The alphanumerics themselves indicate (in the first column) the unique Concern number and whether a report was received that substantiates or failed to substantiate the Concern, and (in the other columns) the file location, category/description, and DOE/WEP homogeneous group number with which the Concern is identified.

Figure B-1 defines and explains both the alphanumerics and the column headings under which they are placed.

Concern Number	Unit 1 Specified	WBNP	Unit 2 Specified	Other Plant Specified	WEP N/A

File locator (under column WBNP: problem located in Watts Bar Nuclear Plant, Unit unspecified)

Category/Description

DOE WEP Group number

EX-85-021-001/S 03A16/3A/SPL201

SP = specific group
SPL = special group
GEN = general groups[a]

Letter indicating descriptive heading
(3A = Procedures for coated electrode not followed)

CRV category number

Item number

A = investigation report received;
B = no investigation report received

Book number

S = report received substantiating the Concern
U = report received not substantiating the Concern

Unique concern number received by WEP with the Concern

Concern No.—The unique identifier on the Employee Concern as provided to DOE/WEP.

Unit 1 Specified—Indicates that the Employee Concern specifically identified Unit 1.

WBNP—Indicates that the Employee Concern is concerned with the Watts Bar Nuclear Plant, but the problem cannot be isolated to either Unit 1 or Unit 2.

Unit 2 Specified—Indicates that the Employee Concern specifically identifies Unit 2.

Other Plant Specified—Indicates that the Employee Concern specifies TVA facilities other than Watts Bar Unit 1 or Unit 2.

WEP N/A—Indicates that the Employee Concern was determined to be outside the work scope of DOE/WEP.

a. Employee Concern will be resolved by the referenced general group evaluation.

Figure B-1. Alphanumerics legend.

CATEGORY/DESCRIPTION

CRV-01 WELDER CERTIFICATIONS

A. Improper welder recertification

1. Backdating of welder certification
2. Nonrigorous verification of requirements for recertification
3. Requalification test not per code requirements
4. Welder not qualified for process used

B. Questionable welder training and experience

C. Administrative problems associated with recertification

D. Welder recertification, not WEP applicable

CRV-02 INSPECTOR CERTIFICATION/QUALIFICATION

A. Visual inspection qualifications do not meet code

B. Questionable visual inspector experience and training

C. Inspector qualification, not WEP applicable

CRV-03 WELD FILLER MATERIAL CONTROL

A. Procedures for coated electrode not followed

B. Poor quality flux

C. Inadequate weld filler traceability

D. Weld filler control, not WEP applicable

CRV-04 PARENT METAL PROBLEMS

A. Unrepaired arc strikes

B. Excessive excavation

CRV-05 DOCUMENTATION/FALSIFICATION

A. Improper alterations

1. Unauthorized access to computerized weld information system
2. Alterations using correction fluid

B. Incorrect or inaccurate documentation

1. Undocumented temporary welds
2. Documentation buyoff without inspection
3. Unspecified documentation inaccuracies

C. Inadequate document control

1. Lost or missing documentation
2. Documentation does not comply with manual
3. Welds not identified/stencilled

D. Documentation, not WEP applicable

CRV-06 WORKMANSHIP/SPECIFIC WELD PROBLEMS

A. Incomplete welds

B. Welds do not satisfy acceptance criteria

C. Possible subsurface defects

D. Unsatisfactory weld appearance

E. Welding dissimilar metals

F. Workmanship, not WEP applicable

CRV-07 NDE PROCESS/PROCEDURE

A. Inadequate process control

1. HVAC ductwork systems not visually inspected
2. Inspection criteria problems
3. Inspection through paint
4. Weld inspection not performed

B. Questionable inspection practice

1. Surface conditioning for NDE
2. Fitup performed by craft
3. Inspection tools not provided

C. Not WEP applicable

CRV-08 WELD PROCESS/PROCEDURE

A. Weld procedures not properly followed

B. Weld procedures not adequate

C. Welding equipment unsuitable

D. Other weld process control problems

E. Improper weld repair

F. Weld process control, WEP not applicable

CRV-09

OTHER WELD QUALITY PROBLEMS

A. Questionable design practice

1. Questionable box hanger weld joint design
2. Use of straight butt joint configuration

B. Questionable management practice

1. Inadequate corrective action follow-up
2. Creation of busy work
3. Disposition by engineering analysis
4. Rework to avoid disciplinary action

C. Questionable construction practices

1. Use of weld bosses
2. Sandblasting while welding
3. Post weld surface conditions

D. Other quality problems, not WEP applicable

EMPLOYEE CONCERN INDEX

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
BEM-5-001-001					07B62
BEM-5-001-002					07B62A
BEP-5-001-001		07B74/7.A.4/GEN A-L			
BEP-5-001-003		05B45/5.B.3/GEN A-L			
BFM-5-001-001					07B60
BFM-5-001-002					07B60A
EX 85-003-003/S		05A08/5.A.1/SPL 233			
EX-85-003-X04		05B47/5.A.1/SPL 233			
EX-85-003-X06/S		05A13/5.A.1/SPL 233			
EX-85-007-002		02B17/2.B/GEN A-L			
EX-85-007-004					07B27
EX-85-008-001/S		01A36/1.A.4/GEN A-L			
EX-85-008-002					09B80
EX-85-009-001/S					09A07
EX-85-010-002/S					09A05
EX-85-012-001/S					09A09
EX-85-020-001	06B78/6.B/SPL 228				
EX-85-021-001/S		03A16/3.A/SPL 201			
EX-85-021-002/S		01A09/1.A.2/SPL 216			
EX-85-030-001		08B53/8.D/GEN A-L			
EX-85-037-002	01B45/1.A.4/SPL 232				
EX-85-037-003	06B29/6.D/SPL 233				
EX-85-037-004		02B12/2.B/GEN A-L			
EX-85-039-001/S		03A26/3.A/SPL 201			
EX-85-039-003/S		09A02/9.A.1/SPL 231			
EX-85-042-002/S		01A46/1.C/GEN A-L			
EX-85-042-003/S		01A33/1.C/GEN A-L			
EX-85-042-004/S		01A50/1.A.2/GEN A-L			
EX-85-042-005/S		01A52/1.A.2/GEN A-L			
EX-85-048-004		01B27/1.A.4/SPL 233			
EX-85-059-001		09B73/9.C.3/GEN A-L			
EX-85-061-003/S		03A25/3.A/SPL 201			
EX-85-061-004		08B31/8.C/GEN A-L			
EX-85-061-005					09B117
EX-85-076-001		06B43/6.B/SPL 246			
EX-85-076-002			06B03/6.B/GEN I,J		
EX-85-082-001		02B36/2.B/GEN A-L			
EX-85-093-001/S		02A02/2.B/GEN A-L			
EX-85-096-002					01B78
EX-85-107-001		01B74/1.C/GEN A-L			
EX-85-107-002					09B105
EX-85-127-003		08B50/8.C/GEN A-L			

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
EX-85-154-001			06B46/6.A/GEN I,J		
EX-85-169-002		02B18/2.B/GEN A-L			
HI-85-006-001					09B92
HI-85-019-001					09B106
HI-85-040-001/S		05A03/5.A.1/SPL 233			
HI-85-042-001					09B34
HI-85-046-001					09B29
HI-85-049-001	06B47/6.C/SP 10				
HI-85-064-001					09B93
HI-85-080-001		01B80/1.B/GEN A-L			
HI-85-114-001					09B107
IN-85-001-001		07B09/7.A.2/GEN A-L			
IN-85-001-002/U		03A01/3.A/SPL 201			
IN-85-001-003/S					08A01
IN-85-001-004/S		02A17/2.B/GEN A-L			
IN-85-001-005/S					06A09
IN-85-001-006		07B45/7.B.2/SPL 236			
IN-85-001-008/S		02A03/2.B/GEN A-L			
IN-85-004-001		08B49/8.C/GEN A-L			
IN-85-004-002					09B108
IN-85-007-001		07B08/7.B.3/GEN A-L			
IN-85-007-002		02B40/2.B/GEN A-L			
IN-85-007-003/S					06A10
IN-85-021-003/S		01A20/1.A.1/GEN A-L			
IN-85-021-X05/S		01A25/1.A.1/GEN A-L			
IN-85-022-001		07B73/7.A.4/GEN F			
IN-85-025-001					09B120
IN-85-026-001/S		07A13/7.B.2/SPL 234			
IN-85-029-001					09B94
IN-85-041-001/S		02A09/2.B/GEN A-L			
IN-85-050-001		08B40/8.C/GEN D-L			
IN-85-050-002			08B30/8.C/GEN D-L		
IN-85-050-003					08B48
IN-85-052-002					09B50
IN-85-052-005		01B75/1.C/GEN A-L			
IN-85-052-006/S		07A10/7.B.2/SPL 236			
IN-85-052-007/S		07A12/7.B.2/SPL 236			
IN-85-052-008/S		03A02/3.A/SPL 201			
IN-85-055-003		01B20/1.A.4/SPL 202			
IN-85-062-002			07B28/7.A.4/GEN I,J		

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A	
IN-85-079-001		02B14/2.B/GEN A-L				
IN-85-079-003					08B26	
IN-85-080-001	04B02/4.A/SP 7					
IN-85-085-001	06B05/6.B/SP 33					
IN-85-085-002	06B05A/6.B/SP 33					
IN-85-089-001/S		02A16/2.B/GEN A-L				
IN-85-089-003		01B50/1.A.4/SPL 210				
IN-85-089-004			06B45/6.B/GEN A-C			DRR WEP 885
IN-85-109-002/S		09B04/9.B.3/GEN A-L				
IN-85-109-003		07B37/7.A.2/GEN D-L				
IN-85-113-001		01B61/1.B/GEN A-L				
IN-85-113-003/S		01A35/1.A.2/GEN A-L				
IN-85-127-001					06B36	
IN-85-128-001					01B34	
IN-85-130-001/S					09A10	
IN-85-134-001/U		06A08/6.B/GEN A-L				
IN-85-134-002		07B07/7.B.3/GEN A-L				
IN-85-134-005		09B01/9.B.3/GEN A-L				
IN-85-137-001	07B20/7.A.2/SP 35					
IN-85-143-001	08B42/8.B/SPL 208					
IN-85-143-002	08B42A/8.B/SPL 208					
IN-85-149-002			09B65/9.C.3/GEN A-L			
IN-85-150-001					01B01	
IN-85-155-001		06B02/6.D/SPL 233				
IN-85-156-001			06B30/6.B/GEN D,E			
IN-85-156-002			07B43/7.A.2/GEN D,E			
IN-85-167-001					09B81	
IN-85-178-003		01B76/1.B/GEN A-L				
IN-85-185-001		08B47/8.A/SPL 215				
IN-85-192-002	09B69/9.C.3/GEN A-L					
IN-85-195-001					09B116	
IN-85-198-001					09B23	
IN-85-202-001/S	06A02/6.C/GEN D,E					
IN-85-203-003		04B01/4.A/GEN A-C				DRR WEP 885
IN-85-209-002		02B43/2.B/GEN A-L				
IN-85-212-001/S					07A26	
IN-85-216-001/S		08A02/8.E/GEN D,E				
IN-85-225-001		01B02/1.B/SPL 235				
IN-85-234-001/S		03A05/3.A/SPL 201				
IN-85-246-001					06B76	
IN-85-246-002/S	04A03/4.B/SP 9					

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A	
IN-85-246-005/S					06A01	
IN-85-247-001/S			03A36/3.B/GEN A-L			
IN-85-247-002		08B01/8.C/SPL 233				DRR WEP 885
IN-85-260-001/S		05A21/5.B.2/SPL 233				
IN-85-260-002/S		05A22/5.B.2/SPL 233				
IN-85-260-003/U					05A06	DRR WEP 885
IN-85-260-004					05B40	
IN-85-260-006		07B57/7.A.4/GEN A-L				
IN-85-260-X05/S		05A23/5.B.2/SPL 233				
IN-85-270-001/S	04A04/4.B/SP 9					
IN-85-271-001/U			07A06/7.B.1/GEN A-L			
IN-85-272-003			07B31/7.A.2/GEN A-C			
IN-85-273-001	09B67/9.C.3/GEN A-L					
IN-85-280-001		08B07/8.C/SPL 233				
IN-85-282-002/U		07A05/7.B.1/SPL 233				
IN-85-283-003			01B03/1.C/GEN A-L			
IN-85-284-001		03A27/3.B/GEN A-L				
IN-85-289-004					09B11	
IN-85-295-001					09B100	
IN-85-295-002					09B52	
IN-85-297-003					09B109	
IN-85-297-004		01B67/1.A.4/GEN F				
IN-85-297-006					09B55	
IN-85-298-001					05B25	
IN-85-298-002		08B06/8.C/SPL 233				
IN-85-299-001		08B05/8.C/GEN A-L				
IN-85-299-002/S		03A29/3.B/GEN A-L				
IN-85-299-003		09B03/9.C.3/SP 6				
IN-85-300-X04		01B81/1.C/GEN A-L				
IN-85-301-001					09B113	
IN-85-303-001		08B04/8.C/SPL 233				
IN-85-310-004		07B39/7.A.2/SPL 233				
IN-85-310-005		03B02/3.A/SPL 201				
IN-85-310-006/S		01A48/1.A.2/GEN A-L				
IN-85-316-005			09B38/9.A.1/SPL 231			
IN-85-316-007			01B68/1.A.4/GEN F			
IN-85-317-001/S		03A31/3.B/GEN A-L				
IN-85-317-002			08B28/8.C/GEN A-L			
IN-85-317-004			08B41/8.D/GEN A-C			
IN-85-321-001		09B63/9.B.3/GEN A-L				

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A	
IN-85-325-004					09B12	DRR WEP 885
IN-85-335-002/S		01A45/1.A.1/GEN A-L				
IN-85-337-002/S		03A04/3.A/SPL 201				
IN-85-338-001		08B34/8.D/GEN A-L				
IN-85-339-005			09B71/9.B.3/GEN A-L			
IN-85-339-X06					05B38	
IN-85-346-003/S		01A05/1.A.2/GEN A-L				
IN-85-349-001			06B27/6.A/GEN F-L			
IN-85-349-002			07B38/7.A.2/GEN D-L			
IN-85-349-005		06B32/6.A/SPL 233				
IN-85-352-001/S		01A14/1.A.2/GEN A-L				
IN-85-352-002/S		03A06/3.A/SPL 201				
IN-85-358-001					07B65	
IN-85-362-002					09B104	
IN-85-365-003		02B11/2.B/GEN A-L				
IN-85-372-001					09B101	
IN-85-377-001					09B110	
IN-85-380-003			06B06/6.B/GEN D,E			
IN-85-396-001					09B20	
IN-85-404-001			08B25/8.E/GEN A-C			
IN-85-405-001		09B16/9.A.1/SPL 231				
IN-85-406-001/S		05A01/5.A.1/SPL 233				
IN-85-406-002		07B05/7.A.2/GEN A-L				DRR WEP 885
IN-85-406-003		07B04/7.B.3/GEN A-L				
IN-85-411-002/S		03A33/3.B/GEN A-L				
IN-85-413-002			06B70/6.A/GEN A-L			
IN-85-414-001		02B49/2.B/GEN A-L				
IN-85-424-001/S		03A11/3.A/SPL 201				
IN-85-424-002		09B17/9.B.3/GEN A-L				
IN-85-424-004/S		039A19/3.C/GEN A-L				
IN-85-424-005/S		01A61/1.C/GEN A-L				
IN-85-424-006/S		03A09/3.C/GEN A-L				
IN-85-424-007/S		03A13/3.A/SPL 201				
IN-85-424-009			09B30/9.B.1/GEN A-L			
IN-85-424-010			09B30A/9.B.1/GEN A-L			
IN-85-424-011/S		01A15/1.A.2/GEN A-L				
IN-85-424-014					01B37	
IN-85-424-X13/S		01A29/1.A.1/GEN A-L				
IN-85-426-001/S		03A10/3.A/SPL 201				
IN-85-426-002/S		01A11/1.A.2/GEN A-L				

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A	
IN-85-435-001			08B03/8.C/GEN A-L			
IN-85-435-002		09B32/9.B.1/GEN A-L				
IN-85-435-003		09B27/9.B.4/SPL 233				
IN-85-435-005		08B02/8.C/GEN A-L				
IN-85-441-001					09B123	
IN-85-441-002		07B48/7.B.1/GEN A-L				
IN-85-441-003/S		03A18/3.A/SPL 201				
IN-85-442-003		02B47/2.B/GEN A-L				
IN-85-442-004		02B09/2.B/GEN A-L				
IN-85-442-008		09B31/9.B.3/SP 11				
IN-85-445-001					01B35	
IN-85-445-002/S		05A02/5.A.1/SPL 233				
IN-85-445-010/S		02A01/2.A/GEN A-L				
IN-85-445-X16/S		05A02A/5.A.1/VOIDED				
IN-85-446-001/S		05A11/5.A.1/SPL 233				DRR WEP 885
IN-85-450-001/s		03A34/3.B/GEN A-L				
IN-85-451-001	09B66/9.C.3/GEN A-L					
IN-85-453-006			08B08/8.C/GEN A-L			
IN-85-453-007/S		01A19/1.A.2/GEN A-L				
IN-85-453-009/S		03A15/3.A/SPL 201				
IN-85-454-001/S		02A10/2.B/GEN A-L				
IN-85-454-002					09B74	
IN-85-454-004/S		03A08/3.A/SPL 201				
IN-85-455-001/S		03A37/3.B/GEN A-L				
IN-85-458-001/S		07A18/7.A.3/SPL 205				
IN-85-458-002/S		02A18/2.A/GEN A-L				
IN-85-458-007/S		05A04/5.A.1/SPL 233				
IN-85-460-003/S	04A02/4.A/SPL 233					
IN-85-460-X04	04B03/4.A/SP 8					
IN-85-460-X05/S	04A01/4.B/SP 9					
IN-85-469-003		08B33/8.B/SPL 233				
IN-85-475-001					09B51	
IN-85-476-003/S		07A24/7.A.4/SPL 205				
IN-85-476-004/S		02A11/2.B/GEN A-L				
IN-85-480-004/S		01A51/1.A.2/GEN A-L				
IN-85-480-007					09B95	
IN-85-486-001			08B09/8.C/GEN A-L			
IN-85-488-001		07B46/7.B.2/SPL 236				
IN-85-493-004/S		01A04/1.A.2/GEN A-L				
IN-85-501-001/S			03A03/3.A/SPL 201			DRR WEP 885
IN-85-503-001/S					01A01	

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
IN-85-510-001/S		02A19/2.A/GEN A-L			
IN-85-511-002		09B68/9.C.3/GEN A-L			
IN-85-513-001/S		02A04/2.B/GEN A-L			
IN-85-515-002			06B26/6.D/GEN F-L		
IN-85-520-002/S		03A38/3.B/GEN A-L			
IN-85-524-001/S		03A35/3.B/GEN A-L			
IN-85-524-002			06B01/6.A/GEN F-L		
IN-85-529-005/S		02A12/2.B/GEN A-L			
IN-85-530-001/S			06A03/6.B/GEN D.E		
IN-85-532-001					07B52
IN-85-532-004/S		01A06/1.C/GEN A-L			
IN-85-532-005/S		01A07/1.A.2/GEN A-L			
IN-85-532-006/S		07A04/7.A.2/SPL 232			
IN-85-533-009/S		01A41/1.A.2/GEN A-L			
IN-85-533-X11/U		01A58/1.A.2/GEN A-L			
IN-85-538-001					09B82
IN-85-540-001/S		01A10/1.A.2/GEN A-L			
IN-85-540-002		03B26/3.B/GEN A-L			
IN-85-541-001/U			06A06/6.A/GEN F-L		
IN-85-543-002/S		01A08/1.A.2/GEN A-L			
IN-85-544-001		08B51/8.A/GEN A-L			
IN-85-544-002		08B52/8.A/GEN A-L			
IN-85-545-005		07B30/7.A.2/GEN A-L			
IN-85-545-X09/U		07A23/7.A.2/GEN A-L			
IN-85-556-001/S		01A37/1.A.4/SPL 233			
IN-85-559-002					06B17
IN-85-561-X05		09B90/9.C.3/GEN A-L			
IN-85-563-007/S		02A20/2.A/GEN A-L			
IN-85-568-001		01B77/1.B/GEN A-L			
IN-85-576-001/S		05A12/5.A.1/SPL 233			
IN-85-579-001/S	06A07/6.A/SPL 233				
IN-85-579-004					09B111
IN-85-579-005	07B51/7.B.1/SPL 212				
IN-85-584-001/S		07A09/7.B.2/SPL 236			
IN-85-584-002/S					07B32
IN-85-585-001					09B79
IN-85-589-002/S		01A38/1.A.4/GEN A-L			
IN-85-593-001		06B73/6.B/GEN A-L			
IN-85-598-001					09B78
IN-85-600-001/S		03A30/3.B/GEN A-L			
IN-85-600-002			08B10/8.C/GEN A-L		
IN 85-600-004	09B05/9.C.2/GEN A-L				

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CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
IN-85-600-006/S		01A47/1.A.2/GEN A-L			
IN-85-612-002			08B11/8.C/GEN A-L		
IN-85-612-006/S		01A03/1.A.2/GEN A-L			
IN-85-612-X07/S		01A30/1.A.1/GEN A-L			
IN-85-613-001		09B13/9.A.1/SPL 231			
IN-85-617-001					09B114
IN-85-627-036/S		01A49/1.A.1/SPL 233			
IN-85-627-037/S		01A53/1.A.1/SPL 233			
IN-85-629-001			09B22/9.B.2/GEN F-L		
IN-85-632-001	06B10/6.C/SPL 233				
IN-85-634-001		09B14/9.A.1/SPL 231			
IN-85-634-002		08B32/8.B/SPL 231			
IN-85-636-001/S		03A39/3.B/GEN A-L			
IN-85-641-002		06B51/6.B/SP 14			
IN-85-641-003					09B25
IN-85-641-005		08B21/8.A/SPL 207			
IN-85-643-002			07B10/7.B.1/GEN D-L		
IN-85-657-001					06B35
IN-85-658-002	08B17/8.B/SP 35				
IN-85-670-001			06B60/6.B/GEN F-L		
IN-85-670-005		07B53/7.A.2/GEN A-L			
IN-85-671-001/S		07A11/7.B.2/SPL 236			
IN-85-671-003		08B24/8.A/SPL 214			
IN-85-671-004/U					07A01
IN-85-672-001		09B15/9.A.1/SPL 231			
IN-85-672-003					01B23
IN-85-681-002					08B12
IN-85-682-001			07B72/7.A.4/GEN F-L		
IN-85-682-002		07B59/7.A.2/SPL 232			
IN-85-682-003		07B55/7.A.2/GEN A-L			
IN-85-682-008		02B45/2.B/GEN A-L			
IN-85-682-X07		05D44/5.B.3/GEN A-L			
IN-85-686-001			01B06/1.A.4/GEN D,E		
IN-85-705-001/S					09A08
IN-85-706-001		01B07/1.B/GEN A-L			
IN-85-706-002/S		02A05/2.B/SPL 235			
IN-85-706-003					07B67
IN-85-706-005					09B102
IN-85-707-001			06B08/6.D/GEN F-L		
IN-85-707-003		01B08/1.B/SPL 232			
IN-85-725-011/S		03A24/3.A/SPL 201			

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CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
IN 85-725-X14/U		01A34/1.C/GEN A-L			
IN-85-725-X15/U		01A34A/1.C/GEN A-L			
IN-85-725-X16		01B09/1.C/GEN A-L			
IN-85-730-001					07B36
IN-85-730-002					07B69
IN-85-730-003					07B69A
IN-85-731-001					09B112
IN-85-738-004					01B10
IN-85-738-008		01B11/1.C/GEN A-L			
IN-85-740-008					01B69
IN-85-740-009		01B32/1.A.1/GEN A-L			
IN-85-767-003/S		07A19/7.A.3/SPL 205			
IN-85-768-X06/S		03A20/3.A/SPL 201			
IN-85-768-X07/S		05A18/5.B.3/GEN A-L			
IN-85-770-002/S		01A21/1.A.1/SPL 210			
IN-85-770-003/S		01A16/1.A.1/SPL 210			
IN-85-770-X07/S		01A31/1.A.1/SPL 210			
IN-85-778-001/S		01A02/1.A.2/GEN A-L			
IN-85-778-X07/S		01A23/1.A.1/GEN A-L			
IN-85-788-002		02B42/2.B/GEN A-L			
IN-85-793-003			06B71/6.B/GEN A-C		
IN-85-815-001/S		01A12/1.A.2/GEN A-L			
IN-85-828-001			06B11/6.B/GEN I,J		
IN-85-834-002			08B15/8.A/SPL 215		
IN-85-835-002/S		01A13/1.A.2/GEN A-L			
IN-85-845-001					09B26
IN-85-845-004/U	06A04/6.E/SPL 233				
IN-85-846-001					06B12
IN-85-851-001/S	06A11/6.B/SP 10				
IN-85-852-001/U					06A13
IN-85-852-002			07B11/7.A.2/GEN A-C		
IN-85-852-003					01B47
IN-85-866-002					09B58
IN-85-868-001					09B56
IN-85-868-002	06B68/6.D/SPL 247				
IN-85-868-003					09B121
IN-85-880-001	08B13/8.C/GEN A-L				
IN-85-887-001/S		05A20/5.C.1/SPL 246			
IN-85-887-003		05B26/5.C.1/SPL 236			
IN-85-890-001/S		05A10/5.A.1/SPL 233			

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A	
IN-85-894-003	.....	08B29/8.D/GEN A-L				
IN-85-923-002	01B42/1.A.4/SPL 233					
IN-85-937-001	.....	09B126/9.B.3/GEN A-L				
IN-85-940-X02	.....	01B66/1.A.4/GEN A-L				
IN-85-940-X03	.....	.....	.....	.....	09B103	
IN-85-940-X04	.....	01B63/1.C/GEN A-L				
IN-85-946-001	.....	.....	.....	.....	07B71	
IN-85-947-003	.....	.....	.....	.....	09B122	
IN-85-947-005	.....	03B41/3.A/SPL 201				
IN-85-947-X08	.....	01B12/1.B/SPL 233				
IN-85-960-001	.....	.....	.....	.....	06B33	
IN-85-965-001/S	.....	01A22/1.A.1/SPL 210				
IN-85-965-002	.....	01B13/1.A.1/SPL 210				
IN-85-981-001/S	.....	02A13/2.B/GEN A-L				
IN-85-981-002	.....	05B01/5.C.1/GEN A-L				
IN-85-982-003	.....	08B35/8.D/SPL 233				
IN-85-996-002	.....	.....	06B63/6.B/GEN A-C			
IN-86-003-001	.....	.....	.....	.....	09B72	
IN-86-017-001	.....	.....	06B40/6.B/GEN A-L			
IN-86-019-001	07B14/7.A.3/SPL 205					
IN-86-019-003	06B24/6.D/SPL 246					
IN-86-032-001/S	06A17/6.C/SP 3					
IN-86-032-002/S	06A16/6.C/SPL 214					
IN-86-037-001	05B31/5.C.1/GEN D,E					DRR
IN-86-039-001	.....	03B45/3.A/SPL 201				WEP
IN-86-046-003	08B23/8.B/SPL 233					885
IN-86-047-001	.....	03B08/3.A/SPL 201				
IN-86-047-002	.....	.....	06B14/6.D/GEN A-C			
IN-86-085-003	09B09/9.C.1/SPL 233					
IN-86-086-001	.....	08B18/8.E/GEN D,E				
IN-86-086-002	.....	.....	.....	.....	08B19	
IN-86-088-001	.....	02B48/2.B/GEN A-L				
IN-86-093-001	06B48/6.B/SP 2					
IN-86-112-002	.....	.....	.....	.....	08B36	
IN-86-122-X02/U	.....	01A43/1.A.4/GEN A-L				DRR
IN-86-131-001	.....	.....	.....	.....	06B16	WEP
IN-86-131-002	.....	.....	.....	.....	06B16A	885

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
IN-86-131-004			06B69/6.A/GEN A-C		
IN-86-131-005			06B18/6.A/GEN A-C		
IN-86-133-001/S	04A05/4.B/SP 9				
IN-86-140-002					09B28
IN-86-142-001		02B37/2.B/GEN A-L			
IN-86-143-002/S		01A26/1.A.1/GEN A-L			
IN-86-150-001/S		03A12/3.C/GEN A-L			
IN-86-155-002/U			06A05/6.B/GEN F-L		
IN-86-155-003		05B18/5.C.1/SP 5			
IN-86-155-004/U					05A07
IN-86-158-006		01B14/1.B/GEN A-L			
IN-86-158-007/S					09A12
IN-86-158-008		06B21/6.C/GEN A-L			
IN-86-167-001/S		03A07/3.C/GEN A-L			
IN-86-167-002		05B19/5.C.3/GEN A-L			
IN-86-167-003/S		03A28/3.B/GEN A-L			
IN-86-167-004/U		01A60/1.C/GEN A-L			
IN-86-167-005/S		01A27/1.A.1/GEN A-L			
IN-86-167-X06/S		01A28/1.A.1/GEN A-L			
IN-86-168-002/S		02A06/2.B/GEN A-L			
IN-86-168-003			05B24/5.C.3/GEN A-L		
IN-86-168-006			05B17/5.B.3/GEN A-L		
IN-86-184-001	06B80/6.C/SPL 229				
IN-86-184-002/S	08A05/8.D/SPL 233				
IN-86-184-003	07B25/7.A.2/SPL 229				
IN-86-184-004/S	08A04/8.D/SPL 233				
IN-86-190-002		01B33/1.B/SPL 211			
IN-86-205-007		01B41/1.A.2/GEN A-L			
IN-86-205-009		07B64/7.A.2/GEN A-C			
IN-86-211-001		05B20/5.C.3/GEN A-L			
IN-86-219-001					09B115
IN-86-230-003		09B37/9.B.3/GEN A-L			
IN-86-246-005					06B74
IN-86-249-X02/S		08A07/8.D/SPL 233			
IN-86-281-001		09B02/9.B.1/GEN A-L			
IN-86-282-004					09B77
IN-86-294-002					09B33
IN-86-297-001	06B15/6.C/SP 1				
IN-86-300-004		09B125/9.C.3/GEN A-L			
IN-86-301-001	06B25/6.D/SPL 206				

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CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
IN-86-301-002/S		01A42/1.A.3/GEN A-L			
IN-86-303-003		01B58/1.B/GEN A-L			
IN-86-303-004		01B57/1.C/GEN A-L			
IN-86-304-001/S		02A21/2.B/GEN A-L			
IN-86-305-003		01B59/1.B/GEN A-L			
IN-86-305-004/S		03A23/3.A/SPL 201			
IN-86-315-006		09B44/9.B.3/GEN A-L			
NS-85-001-001/S		07A22/7.A.3/SPL 205			
NS-85-001-X03/S		07A30/7.A.2/GEN A-L			
OW-85-003-001		09B36/9.A.1/SPL 231			
OW-85-003-002		08B14/8.C/GEN A-L			
PH-85-001-005/S					09A13
PH-85-002-019					09B96
PH-85-002-029					01B36
PH-85-002-030		01B17/1.B/GEN A-L			
PH-85-003-011		06B28/6.D/GEN A-L			
PH-85-003-020		01B46/1.B/GEN A-L			
PH-85-005-001/S					09A06
PH-85-008-001		05B46/5.B.3/GEN A-L			
PH-85-009-001					09B21
PH-85-012-001/S		07A02/7.A.1/SP 35			
PH-85-012-X03/S		07A29/7.A.1/SP 35			
PH-85-013-001/S		03A32/3.B/GEN A-L			
PH-85-016-001/S		02A14/2.B/GEN A-L			
PH-85-027-001/S	06A14/6.B/SP 12				
PH-85-027-002/S	08A09/8.E/SP 12				
PH-85-027-004/S	06A15/6.C/SP 12				
PH-85-027-005/S	07A31/7.A.4/SP 12				
PH-85-027-006	06B23/6.B/SP 12				
PH-85-027-007	08B37/8.A/SP 12				
PH-85-027-X08		05B04/5.B.2/GEN A-L			
PH-85-032-001		06B67/6.D/SPL 247			
PH-85-035-002	06B79/6.B/SP 34				
PH-85-035-003		08B27/8.A/SPL 204			
PH-85-040-001/S	07A20/7.A.3/SPL 205				
PH-85-051-001			07B24/7.A.2/GEN A-C		
PH-85-052-002/S		01A44/1.A.1/GEN A-L			
PH-85-052-X03/U		01A59/1.A.1/GEN A-L			
SQM-5-001-001/U					07A15
SQM-5-001-002/U					07A16
SQM-6-005-001/S				01A54/1.C/GEN A-L	

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CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A	
SQM-6-005-X02/S				01A55/1.A.1/GEN A-L		
SQM-6-008-001				06B75/6.B/GEN A-C		
WBM-5-001-001		07B63/7.B.2/SPL 234				
WBM-5-001-002					07B75	
WBM-6-002-001		09B91/9.C.3/GEN A-L				
WBM-6-004-X08					05B39	
WBP-6-004-X01		02B26/2.B/GEN A-L				
WBP-6-007-001		09B35/9.A.1/SPL 231				
WBP-6-022-016		01B70/1.A.1/GEN A-L				
WBP-6-022-026		01B71/1.A.2/GEN A-L				
WBP-6-022-X28		01B73/1.A.1/GEN A-L				
WI-85-002-001		03B23/3.A/SPL 201				
WI-85-003-001/S		01A32/1.A.1/GEN A-L				
WI-85-003-X02/S		01A24/1.A.1/GEN A-L				
WI-85-013-001/S		02A26/2.A/SPL 247				
WI-85-013-002		07B54/7.B.2/SPL 236				
WI-85-013-003/S	07A14/7.A.3/SPL 205					
WI-85-025-001/S		05A14/5.A.1/SPL 233				
WI-85-026-005		03B44/3.C/GEN A-L				
WI-85-029-002/S		07A17/7.A.4/SPL 248				
WI-85-030-001				09B06/9.B.1/GEN A-L		
WI-85-030-002/S		02A07/2.A/GEN A-L				
WI-85-030-003		07B66/7.A.2/GEN A-L				
WI-85-030-004/S		09A14/9.B.3/SPL 246				
WI-85-030-005		08B20/8.D/GEN A-L				
WI-85-030-006		09B18/9.B.1/SPL 233				
WI-85-030-007		07B19/7.A.3/SPL 205				DRR WEP 885
WI-85-030-008		07B01/7.A.3/SPL 205				
WI-85-030-009		07B02/7.A.3/SPL 205				
WI-85-030-010				09B06A/9.B.1/GEN A-L		
WI-85-035-001					07B23	DRR WEP 885
WI-85-035-002	05B21/5.B.2/SPL 233					
WI-85-035-004		06B42/6.C/SP 4				
WI-85-035-007/U	01A57/1.A.4/SPL 233					
WI-85-041-001/S		03A14/3.C/GEN A-L				
WI-85-041-002/S		02A15/2.A/GEN A-L				DRR WEP 885
WI-85-041-003/S		05A19/5.C.1/SPL 246				
WI-85-041-004		05B08/5.C.1/SPL 205				
WI-85-041-006/S		07A25/7.A.3/SPL 205				
WI-85-041-007		07B56/7.A.3/SPL 205				
WI-85-041-008/S		07A21/7.A.3/SPL 205				

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
WI-85-041-009/S		03A21/3.A/SPL 201			
WI-85-041-010		07B16/7.A.3/SPL 205			
WI-85-041-012/S		03A22/3.C/GEN A-L			
WI-85-041-013		07B58/7.B.2/SPL 236			
WI-85-042-001					09B97
WI-85-046-002/S		02A08/2.B/GEN A-L			
WI-85-046-003		02B35/2.A/GEN A-L			
WI-85-046-014/S		02A22/2.B/GEN A-L			
WI-85-046-X18		02B24/2.A/GEN A-L			
WI-85-050-001	06B19/6.C/SP 13				
WI-85-053-001					09B124
WI-85-053-002		05B02/5.C.2/GEN A-L			
WI-85-053-003/S		05A05/5.B.1/SPL 209			
WI-85-053-004/S		03B21/3.A/SPL 201			
WI-85-053-012					09B24
WI-85-055-001/S		01A17/1.A.3/GEN A-L			
WI-85-056-001/S		01A18/1.A.3/GEN A-L			
WI-85-064-001		05B27/5.B.3/SPL 233			
WI-85-064-002		08B45/8.A/SPL 207			
WI-85-064-003		09B70/9.C.3/GEN A-L			
WI-85-064-005		06B31/6.B/SPL 203			
WI-85-064-006		05B13/5.A.1/SPL 233			
WI-85-064-X04		05B30/5.B.3/GEN A-L			
WI-85-076-001		05B06/5.B.3/GEN A-L			
WI-85-076-002		05B05/5.B.2/GEN A-L			
WI-85-081-002		05B35/5.B.3/GEN F-L			
WI-85-081-003		08B44/8.A/SPL 207			
WI-85-081-004		06B50/6.B/SPL 213			
WI-85-081-005		06B64/6.B/SPL 233			
WI-85-081-007/S		02A23/2.B/GEN A-L			
WI-85-081-010		02B32/2.B/GEN A-L			
WI-85-081-X06		05B32/5.B.3/GEN A-L			
WI-85-084-001/S		08A03/8.D/GEN A-L			
WI-85-085-003					09B98
WI-85-091-007		05B42/5.C.1/GEN A-L			

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
WI-85-097-001/U			05A15/5.B.3/GEN A-L		
WI-85-097-002/U			05A16/5.B.3/GEN A-L		
XX-85-010-001/U					09A11
XX-85-013-001				03A17/3.C/GEN A-L	
XX-85-034-001				07B70/7.A.4/GEN A-L	
XX-85-034-X02				05B03/5.B.3/GEN A-L	
XX-85-041-001/U				08A08/8.A/GEN A-L	
XX-85-045-001				01B24/1.B/GEN I,J	
XX-85-049-001/S				01A39/1.A.1/GEN A-L	
XX-85-049-X03/S				01A40/1.A.1/GEN A-L	
XX-85-054-001/U				07A07/7.A.4/GEN A-L	
XX-85-065-001/U					07A08
XX-85-065-002					09B99
XX-85-068-003				03B42/3.A/GEN A-L	
XX-85-068-005				05B28/5.B.3/GEN A-L	
XX-85-068-006				03B38/3.A/GEN A-L	
XX-85-068-007/U					06A12
XX-85-068-008				09B42/9.B.1/GEN A-L	
XX-85-069-001/S				01A62/1.B/GEN A-L	
XX-85-069-001-R1					02B38
XX-85-069-003/S					02A25
XX-85-069-003-R1/U				02A24/2.B/GEN A-L	
XX-85-069-X05		02B34/2.A/GEN A-L			
XX-85-069-X13/S					01A63
XX-85-082-001					05B41
XX-85-082-002					05B43
XX-85-083-001/U				07A03/7.A.2/GEN A-L	
XX-85-086-002					09B08
XX-85-086-003/S					09A01
XX-85-086-004					09B08B
XX-85-088-001				05B22/5.A.2/GEN A-L	
XX-85-088-003/U				05A17/5.A.2/GEN A-L	
XX-85-088-X05/S				01A56/1.A.1/GEN A-L	
XX-85-098-001				06B72/6.B/GEN A-C	
XX-85-100-001/U				08A06/8.E/GEN A-L	
XX-85-101-005					09B83
XX-85-101-006				01B65/1.A.4/GEN A-L	
XX-85-102-004				09B43/9.B.3/GEN A-L	
XX-85-102-006				07B12/7.A.2/GEN A-L	
XX-85-102-011/U					09A03

CONCERN NO.	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
XX-85-107-001				02B27/2.B/GEN A-L	
XX-85-108-001/U				07A27/7.A.4/GEN A-L	
XX-85-108-002/U				07A28/7.A.4/GEN A-L	
XX-85-110-001				09B40/9.B.1/GEN A-L	
XX-85-124-001				03B43/3.B/GEN A-L	

CONCERNS	UNIT 1 SPECIFIED	WBNP	UNIT 2 SPECIFIED	OTHER PLANT SPECIFIED	WEP N/A
TOTAL: 606	TOTAL: 56	TOTAL: 329	TOTAL: 55	TOTAL: 33	TOTAL: 133

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APPENDIX C

MASTER LISTING AND METHOD OF EVALUATION FOR WEP IDENTIFIED HOMOGENEOUS GROUPS

11/23/87

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MASTER LISTING AND METHOD OF EVALUATION FOR

WEP IDENTIFIED HOMOGENEOUS GROUPS

Group Numbering System/Origin	
Specific Groups: (Numbers 1-200)	Formulated from Employee Concerns; Designation: EC-SP-XX
	Formulated from Quality Indicators; Designation: QI-SP-XX
Special Groups: (Numbers 201-400)	Formulated from Employee Concerns; Designation: EC-SPL-XX
	Formulated from Quality Indicators; Designation: QI-SPL-XX
	Additional Evaluation Groups; Designation: EX-SPL-01, 02, 03, etc.
General Groups: (Letters A-M)	General Plant Overview; standard post-weld inspections/NDE and documentation review.

Approval: D. J. Lubade 11-23-87
Date

	Items/Groups	Associated Documents
1. (EC-SP-1)	Unit 1, safety-related welds as follows: nine welds in the Unit 1 pipe whip restraints in the North Valve room identified by QTC on drawings 48W1708-03 (R14) and -04 (R13). Examine associated weld documentation for evidence of repair by TVA. If there is no evidence that this problem has been suitably resolved, physically examine using an inspection/NDE technique appropriate for detecting subsurface cracks. PROBLEM/SUBJECT: POSSIBLE SUBSURFACE DEFECTS.	IN-86-297-001/06B15/6.C
2. (EC-SP-2)	Unit 1, safety-related fire protection system weld-o-lets to header pipe welds in the control building stairway going to the southeast office by the spreader room. Evaluate for insufficient weld material using visual inspection. PROBLEM/SUBJECT: WELDS DO NOT MEET ACCEPTANCE CRITERIA.	IN-86-093-001/06B48/6.B
3. (EC-SP-3)	Unit 1, safety-related welds on beam A15-K, 733' 10" elevation in the South valve room. Evaluate using the inspection/NDE technique appropriate for the detection of slag inclusion and subsurface cracks. PROBLEM/SUBJECT: POSSIBLE SUBSURFACE DEFECTS.	IN-86-032-001/06A17/6.C
4. (EC-SP-4)	Unit 1, safety-related box anchor welds. WEP will evaluate the box anchors on the ECRW line in the auxiliary building at the 713 foot elevation using an inspection/NDE technique appropriate to detect slugged welds. PROBLEM/SUBJECT: SLUGGED WELD.	WI-85-035-004/06B42/6.C
5. (EC-SP-5)	Unit 1, safety-related non-vendor welds in systems buried below the Unit 1 reactor building. DOE/WEP will determine which welds are involved and evaluate the associated documentation. NOTE: QTC verified that the welds are in Systems 1, 3, and 7, and were made by TVA welders. PROBLEM/SUBJECT: MISSING DOCUMENTATION.	IN-86-155-003/05B18/5.C.1
6. (EC-SP-6)	Unit 1, safety-related, welds associated with 14-inch stainless steel pipe off the Residual Heat Removal (RHR) pumps. Evaluate using an inspection/NDE technique appropriate for the detection of reduced wall thickness. NOTE: The location specified was provided by QTC in response to a DOE/WEP request for specific location. PROBLEM/SUBJECT: SURFACE CONDITION/VIOLATION OF MINIMUM WALL.	IN-85-299-003/09B03/9.C.3

	Items/Groups	Associated Documents	
7. (EC-SP-7)	Unit 1, safety-related pipe pressure boundary. 18 inch carbon steel pipe, located in the reactor building, 713' elevation, near the personnel/equipment hatch. Perform visual examination of base metal adjacent to welds for evidence of arc strikes and/or excessive metal excavation. PROBLEM/SUBJECT: UNREPAIRED ARC STRIKE.	IN-85-080-001/04B02/4.A	
8. (EC-SP-8)	Unit 1, safety-related pipe pressure boundary. System 78 piping, auxiliary building, 732' elevation near A7 and "V" or "U" wall. Perform visual examination of base metal adjacent to welds for evidence of arc strikes and/or excessive metal excavation. PROBLEM/SUBJECT: UNREPAIRED ARC STRIKE.	IN-85-460-X04/04B03/4.A	
9. (EC-SP-9)	Unit 1, safety-related pipe pressure boundary. 10 inch stainless steel piping, System 72, auxiliary building, 713' elevation in heat exchanger room 1A. Locate subject arc strike/excavation area, examine and record as found condition. Compare existing conditions to inspection records and evaluate documentation. PROBLEM/SUBJECT: EXCESSIVE MATERIAL EXCAVATION.	IN-85-460-X05/04A01/4.B IN-85-270-001/04A04/4.B	IN-85-246-002/04A03/4.B IN-86-133-001/04A05/4.B
10. (EC-SP-10)	Unit 1, safety-related welds as follows: Two circumferential welds on the Unit 1 main steam impingement sleeve located in the yard adjacent to the auxiliary building (refer to marked isometric drawing provided with OE calculation report B41-851010-0002). DOE/WEP has determined that the impingement sleeves are safety-related and will evaluate the associated TVA analysis to determine if further physical examination is appropriate. PROBLEM/SUBJECT: POSSIBLE SUBSURFACE DEFECTS, SLUGGED WELD.	HI-85-049-001/06B47/6.C	IN-85-851-001/06A11/6.B
11. (EC-SP-11)	Unit 1, safety-related welds associated with embedded beams identified on Civil Document Tracking Program line item No. 009489331011. Review all associated documentation, including the concrete pour records and evaluate. PROBLEM/SUBJECT: IMPROPER ENGINEERING DISPOSITION.	IN-85-442-008/09B31/9.B.3	

	Items/Groups	Associated Documents	
12. (EC-SP-12)	Unit 1, safety-related welds as follows: Two Unit 1 MSRV piping restraint welds in the South Valve Room identified by QTC on drawing 48W1707-14. Evaluate using an inspection/NDE technique appropriate for the detection of cracks and laminations. NOTE: QTC response to DOE/WEP inquiry indicates that the specific welds involved are same for the referenced concerns, but the concern PH-85-027-002/08B16 implies that the problems may extend to include all MSRV piping restraints in the South Valve Room. WEP evaluation will focus on the specific welds identified and will expand the evaluation as appropriate. PH-85-027-007/08B37 is assumed to be referencing the same welds as the other concerns since it is identified as being in the same area and was initiated by the same individual. PROBLEM/SUBJECT: WELDS DO NOT MEET ACCEPTANCE CRITERIA, IMPROPER WELD REPAIR, NO INSPECTION PERFORMED.	PH-85-027-001/06A14/6.B PH-85-027-002/08A09/8.E PH-85-027-004/06A15/6.C	PH-85-027-005/07A31/7.A.4 PH-85-027-006/06B23/6.B PH-85-027-007/08B37/8.A
13. (EC-SP-13)	Unit 1, safety-related welds as follows: Welds on the 4 each, 8" stainless steel ERCW pipes in the immediate area of the entry door to the Unit 1 annulus area. Evaluate using an inspection technique suitable for detection of deteriorated metal, lack of penetration and loss of purge. PROBLEM/SUBJECT: POSSIBLE SUBSURFACE DEFECTS.	WI-85-050-001/06B19/6.C	
14. (EC-SP-14)	Unit 1, safety-related welds associated with the "T-bar shims" on loops 3 and 4 at the 718' elevation fabricated in 1982. Evaluated using post-weld inspection/NDE. PROBLEM/SUBJECT: WELDS DO NOT MEET ACCEPTANCE CRITERIA.	IN-85-641-002/06B51/6.B	
15. (QI-SP-2)	Unit 1, safety-related welds associated with the hangers referred to in Black and Veatch report with the following Numbers: 703, 709, 715, 716, 717, 718, 735, 744, 750, 751, 751, 752, 754, 795. Reinspect all hangers listed in above B&V reports. PROBLEM/SUBJECT: INCOMPLETE WELDING ON HANGER. INCOMPLETE CORRECTIVE ACTION.	Black and Veatch report.	
16. (QI-SP-3)	Unit 1, safety-related welds identified on subject NCRs. Perform review of weld operation sheets and associated NDE reports to verify that all inspectors involved are actually represented (e.g., same inspector on both documents, etc.) PROBLEM/SUBJECT: DOCUMENTATION DOES NOT NECESSARILY INDICATE THE INSPECTOR(S) WHO ACTUALLY PERFORMED THE WORK. CONFLICTING SIGNOFFS ON VARIOUS INSPECTION DOCUMENTS. INCOMPLETE TECHNICAL JUSTIFICATION ON VOID.	NCR No. 4576R, 4941.	

	Items/Groups	Associated Documents
17. (QI-SP-4)	Unit 1, safety-related welds associated with the subject NCRs. Review weld data for weld numbers listed on NCR 4582, for verification of: 1. Level and inspector for MT's on NDE report(s). 2. Level and inspector for operation sheet(s). PROBLEM/SUBJECT: NCR VOIDED STATEMENT DID NOT ADDRESS THE ACCEPTANCE SIGNATURE OF MT'S ON A OPERATION SHEET BY A LEVEL I. INCOMPLETE TECHNICAL JUSTIFICATION FOR VOIDING.	4582, 5527, 4576, 4941.
18. (QI-SP-5)	Unit 1, safety-related pipe as follows: large bore piping where windows were cut to observe welding. Evaluate to determine if windows were reinspected after repair. PROBLEM/SUBJECT: UNINSPECTED WELD WINDOW. INCOMPLETE CORRECTIVE ACTION BASED ON NO RADIOGRAPHIC EXAMINATION OF WINDOW REPAIR.	NCR 6575
19. (QI-SP-6)	Unit 1, safety-related welds as follows: 1. Weld Nos.: 1-001A-D001-03A, 03B, 03C, and 03D. 1 x 1-1/2 x 6 in lg lug to subassembly 01A-M5-2. Fabrication SK: WBN-E-2878-IC-1/Hanger SK: 1-01A-303. 2. Weld Nos.: 1-001A-D003-03A, 03B, 03C, and 03D. 1 x 1-1/2 x 6 in. lg lug to DIA-M. Fabrication SK: WBN-E-2878-IC-3/Hanger SK: 1-01A-343. 3. Weld Nos.: 1-001A-D006-03A, 03B, 03C and 03D. 1 x 1-1/2 x 6 in. lg lug to DIA-MS. Fabrication SK: WBN-E-2878-IC-6/Hanger SK: 1-01A-383. 4. Weld Nos.: 1-001A-D009-03A, 03B, 03C and 03D. 1 x 1-1/2 x 6 in. lg lug to 01A-MS. Fabrication SK: WBN-E-2878-IC-9 Hanger SK: 1-01A-423. Conduct a document review to verify that the original documentation is verified as required. If verification cannot be made evaluate using an inspection technique that is appropriate. PROBLEM/SUBJECT: WELD FILLER MATERIAL CONTROL. INCOMPLETE TECHNICAL DOCUMENTATION--INSUFFICIENT WELDER STATEMENT SHEETS.	NCR 4390-Rev. 0, 1, 2
20. (QI-SP-7)	Unit 1, safety-related weld as follows: (ASME small bore) Perform required final NDE inspection on Weld 1-003B-T080-06. PROBLEM/SUBJECT: LOST DOCUMENTATION. INADEQUATE TECHNICAL VERIFICATION (BASED ON WELDER ID AND WELD ASSIGNMENT SHEET-NO VERIFICATION OF INSPECTION).	NCR 5807 R1
21. (QI-SP-8)	Unit 1, safety-related welds as follows: Structural steel partition wall (48N1322-1) anchor bolts and welds not inspected and documented. Inadequate engineering justification and inspection criteria for disposition. Reinspect to proper criteria and document results. Evaluate for impact on other like structures. PROBLEM/SUBJECT: NO INSPECTION AND DOCUMENTATION MISSING ON WELDS. INADEQUATE CORRECTION ACTION (NEED CONSIDER IMPACT--NO ORIGINAL 100% INSPECTION). INADEQUATE TECHNICAL JUSTIFICATION.	NCR 3454 R0.

WEP IDENTIFIED HOMOGENEOUS GROUPS (continued)

	Items/Groups	Associated Documents
22. (QI-SP-9)	Unit 1, safety-related welds as follows: Embedded HVAC frame has an unspecified number of 4 x 5 in. sections (cut-outs) rewelded back in. Cause of cut-out and integrity of weld unknown. No inspection of welds required for use-as-is disposition. Reinspect welded "cut-out" areas to approved criteria and submit to engineering for analysis of as-built condition. Location: Frame SMK16, approximately 8 ft-0 in. east of A5 and approximately 9 ft-0 in. south of "U" line. PROBLEM/SUBJECT: 4 x 5 INCH SECTIONS OF FRAMES CUT OUT, THEN WELDED BACK IN PLACE. WELDS NOT INSPECTED, ENGINEERING DISPOSITION USE-AS-IS WAS NOT JUSTIFIED.	NCR-4522 R-0.
23. (QI-SP-10)	Unit 1, safety-related pipe pressure boundary. Verify minimum wall has not been violated at the locations of arc strike removals as shown on subject CARs. PROBLEM/SUBJECT: ARC STRIKES ON UNIT 1, REACTOR COOLANT PUMPS NO. 3 AND 4 (CASINGS). NO VERIFICATION OF MINIMUM WALL THICKNESS AFTER GRINDING AND ACID ETCH. INCOMPLETE CORRECTIVE ACTION.	CAR 78-1, 78-2. NCR 1315R
24. (QI-SP-11)	Unit 1, safety-related welds as follows: Seismic pipe supports 78-1FPC-R9, R10, R-11, R-12. Evaluate using standard post-weld inspection. PROBLEM/SUBJECT: PIPE SUPPORTS WITH VARIOUS WELD DEFECTS. INSUFFICIENT TECHNICAL JUSTIFICATION. FOR USE-AS-IS DISPOSITION. NCR STATES USE-AS-IS DUE TO THE INSTALLATION OF SPENT FUEL RACKS CONTAINING NEW FUEL MAKING REWORK EXTREMELY DIFFICULT IF NOT IMPOSSIBLE	NCR 4139R
25. (QI-SP-12)	Unit 1, safety-related welds as follows: Evaluate welds performed by the following welders to see if they have made production welds outside of qualified range. If yes provide identification location, and proposed corrective action. Welders: M6-AA, M6-AD, M6-AE, M6-AH, 06-AU. PROBLEM/SUBJECT: 1. RANGE SPECIFIED ON WELDER QUALIFICATION INCORRECT. 2. RANGE LIMITATION NOT SHOWN IN MSL-2.9. INCOMPLETE CORRECTIVE ACTION.	CAR 85-31
26. (QI-SP-13)	Unit 1, safety-related welds as follows: Inspect the welds on duct supports 0-65-RB-H-2001 and 0-65-RB-H-2002. PROBLEM/SUBJECT: NCR WAS VOIDED WITHOUT ANY EXPLANATION AS TO REASON.	NCR 3450.

WEP IDENTIFIED HOMOGENEOUS GROUPS (continued)

	Items/Groups	Associated Documents
27. (QI-SP-14)	Unit 1, safety-related welds associated with the following: Review the acceptability of ANSI B31.1 "Hot Functional" in lieu of ASME Section III hydro-test for steam generator blowdown lines. PROBLEM/SUBJECT: SUBSTITUTION OF ANSI B31.1 LEAK TEST ACTIVITY FOR THE REQUIRED ASME SECTION III HYDRO-TEST. INADEQUATE TECHNICAL JUSTIFICATION.	NCR 3782 RO, 1, 2.
28. (QI-SP-15)	Unit 1, safety-related welds associated with the Diesel Air Dryer 1A-1. Review documentation associated with this installation for weld inspection documentation or removal. If not inspected, perform and document required inspections. PROBLEM/SUBJECT: WELDING PERFORMED WITHOUT APPROVED INSTRUCTIONS. INADEQUATE CORRECTIVE ACTION BASED ON NO DETERMINATION OF IMPACT OF WELDING.	CAR 82-10
29. (QI-SP-16)	Unit 1, safety-related welds as follows: (ASME small bore) Socket welds. Visually inspect the following to verify acceptable weld size. 1-067C-T260-74 through 77 (XPS-551). 1-067C-T407-01 and 02 (XPS-858). 1-067C-T406-01 and 02 (XPS-887). PROBLEM/SUBJECT: INCORRECT SCHEDULE PIPE PER BILL OF MATERIAL. INADEQUATE CORRECTIVE ACTION (NO APPARENT VERIFICATION OF CORRECT WELD SIZE RELATED TO T). SCHEDULE 40 PIPE REPLACED BY SCHEDULE 80 WHICH WOULD REQUIRE A LARGER FILLET WELD TO BE USED.	NCR 5495-RO
30. (QI-SP-17)	Unit 1, safety-related welds associated with the subject NCRs. (ASME small bore) Welder 6SSX was not qualified to procedure GT-88-01. 6SSX performed welds to this procedure. Review documentation for Welder 6SSX to determine if other work was performed by unqualified welders. Weld performed was done to procedures to which he was not qualified. PROBLEM/SUBJECT: TWO WELDERS WERE IDENTIFIED AS WELDING ON THE SAME JOINT. ONE WAS QUALIFIED TO DO THE WORK, THE OTHER ONE WAS NOT. INADEQUATE TECHNICAL JUSTIFICATION (NEED KNOW IF MATERIAL REQUISITION SHEET TRACES WELDER TO WELD).	NCR 4868 RO, 5304, 5330
31. (QI-SP-18)	Unit 1, safety-related welds associated with the subject NCR. NCR 1047 addresses 5 containment vessel penetration sleeves with conflicting weld prep thicknesses. Perform an engineering evaluation of the documentation associated with the subject welds and evaluate the as-constructed configuration. PROBLEM/SUBJECT: UNDEFINED WELD PREP REPAIR METHOD. INCOMPLETE DOCUMENTATION FOR ACCEPTABILITY OF REPAIR.	NCR 1047

WEP IDENTIFIED HOMOGENEOUS GROUPS (continued)

		Items/Groups	Associated Documents	
32.	(QI-SP-19)	Unit 1, safety-related welds as follows: welds on seismic pipe sleeve hanger support 70-1CC-R487 (NCR 4477 RO Attachment 1). Evaluate using appropriate inspection/NDE criteria. PROBLEM/SUBJECT: INCOMPLETE TECHNICAL JUSTIFICATION FOR ACCEPTANCE OF DEFECTIVE WELDS. EVALUATE FOR IMPACT.	NCR 4477 RO	
33.	(EC-SP-16)	Unit 1, safety-related welds as follows: Welds on a hanger at beam W33X200 located in the South Valve room at Elevation 754 feet 10 inches, 1-H and 11-H on the vertical welds. Verify that this hanger has been installed per drawing requirements or suitably addressed by an NCR resolution. PROBLEM/SUBJECT: UNACCEPTABLE WELD PROFILE.	IN-85-085-001/06B05/6.B	IN-85-085-002/06B05A/6.B
34.	(EC-SP-17)	Unit 1, safety-related welds on the system 68, three inch stainless steel line on top of the pressurizer with a valve installed in the line. PROBLEM/SUBJECT: CRACK IN VALVE BODY EXTENDING INTO THE WELD ZONE.	PH-85-035-002/06B79/6.B	
35.	(EC-SP-15)	Unit, 1 safety-related welds associated with HVAC ductwork systems. DOE/WEP will obtain and will review TVA technical justification for the HVAC weld acceptance criteria and determine the appropriate action to evaluate these concerns. (This group will be evaluated using results of general examination; Group M.) PROBLEM/SUBJECT: POSSIBLE UNINSPECTED WELDS.	PH-85-012-X03/07A29/7.A.1 IN-85-137-001/07B20/7.A.2 PH-85-012-001/07A02/7.A.1 IN-85-658-002/08B17/8.B	
36.	(QI-SP-1)	Unit 1, safety-related pipe pressure boundary. Arc strike on pressurizer relief tank spin WAT-RCATPR-01. Visually inspect to determine that minimum wall thickness was not violated. Determiine the appropriate action to evaluate these concerns. PROBLEM/SUBJECT: ARC STRIKE. INCOMPLETE CORRECTIVE ACTION. NO CHECK FOR MINIMUM WALL THICKNESS.	NCR717R1	

	Items/Groups	Associated Documents	
201. (EC-SPL-1)	Unit 1, safety-related welds performed using the Shielded Metal Arc Process (SMAW). (A) DOE/WEP will evaluate the effects of welding with coated electrode that has been exposed to atmosphere for prolonged periods of time and determine the appropriate method to physically examine the subject welds. (B) DOE/WEP will evaluate the potential for inadvertent use of incorrect weld filler. NOTE: (1) Preliminary WEP review indicates that steels with carbon equivalents less than 0.45 are not detrimentally affected by prolonged flux exposure. (2) The only specific reference to the possibility of mixing rod due to filler material control practice appears as the result of the investigation of concern IN-85-052-008 which indicates that 7018/E309 from rod shack No. 2 had only one operating oven which could "easily mix rods at issue." PROBLEM/SUBJECT: IMPROPER PROCEDURES FOR CONTROL OF COATED ELECTRODE.	IN-85-001-002/03A01/3.A IN-85-768-X06/03A20/3.A IN-85-310-005/03B02/3.A WI-85-041-009/03A21/3.A EX-85-061-003/03A25/3.A IN-86-047-001/03B08/3.A EX-85-021-001/03A16/3.A IN-85-052-008/03A02/3.A IN-85-424-007/03A13/3.A IN-85-441-003/03A18/3.A IN-85-725-011/03A24/3.A WI-85-002-001/03B23/3.A IN-86-039-001/03B45/3.A IN-85-501-001/03A03/3.A	IN-86-305-004/03A23/3.A IN-85-947-005/03B41/3.A WI-85-053-004/03B21/3.A IN-85-454-004/03A08/3.A IN-85-453-009/03A15/3.A IN-85-426-001/03A10/3.A IN-85-352-002/03A06/3.A IN-85-337-002/03A04/3.A IN-85-424-001/03A11/3.A IN-85-234-001/03A05/3.A EX-85-039-001/03A26/3.A
202. (EC-SPL-4)	Unit 1, safety-related electrical supports in the auxiliary building, 713' elevation, fabricated between 1980-1981. Review NCRs for evidence of suitable resolution by TVA. If there is no evidence of resolution, evaluate using standard post-weld inspection/NDE. NOTE: Establish the group by area only if segregation by date is not possible. PROBLEM/SUBJECT: WELDER NOT QUALIFIED TO PROCEDURE USED. (UNQUALIFIED APPRENTICES)	IN-85-055-003/01B20/1.A.4	
203. (EC-SPL-6)	Unit 1, safety-related fire protection system welds in the Diesel Generator Building No. 5. Evaluate using an inspection/NDE technique appropriate to detect lack of bevel prior to welding. PROBLEM/SUBJECT: WELDS DO NOT MEET ACCEPTANCE CRITERIA.	WI-85-064-005/06B31/6.B	

	Items/Groups	Associated Documents	
204. (EC-SPL-7)	Unit 1, safety-related welds on the heavy wall intake piping between the pump house and reactor. DOE/WEP will identify the system involved, review NCRs for evidence of suitable resolution by TVA, and review the associated weld procedures to verify that the use of 6010-P5 was not permitted by the procedure. Further assessment will be based on this data assessment. NOTE: (1) Preliminary WEP review indicates there is no 32" piping from the pumphouse. There is a 30" and a 36" essential raw water line that may have been what the CI is referring to. PROBLEM/SUBJECT: WELD PROCEDURE NOT FOLLOWED.	PH-85-035-003/08B27/8.A	
205. (EC-SPL-8)	Unit 1, safety-related AWS welds fabricated prior to November 2, 1981 and inspected when inspection through carbo-zinc primer was authorized. Evaluate using standard post weld inspection/NDE with all coatings removed. (This group will be evaluated using results of general group examination; Groups D, F, G, I and K) PROBLEM/SUBJECT: POTENTIAL FOR INITIAL INSPECTION THROUGH PAINT, MISSING DOCUMENTATION.	WI-85-030-008/07B01/7.A.3 WI-85-030-009/07B02/7.A.3 IN-85-458-001/07A18/7.A.3 IN-86-019-001/07B14/7.A.3 PH-85-040-001/07A20/7.A.3 WI-85-041-010/07B16/7.A.3 WI-85-041-008/07A21/7.A.3 WI-85-041-007/07B56/7.A.3	NS-85-001-001/07A22/7.A.3 WI-85-030-007/07B19/7.A.3 WI-85-013-003/07A14/7.A.3 WI-85-041-006/07A25/7.A.3 IN-85-767-003/07A19/7.A.3 WI-85-041-004/05B08/5.C.1 IN-85-476-003/07A24/7.A.4
206. (EC-SPL-9)	Unit 1, safety-related welds associated with PDO devices located in the reactor building. Evaluate using standard post-weld inspection/NDE. (This group will be combined with Group 217 for evaluation). NOTE: Preliminary WEP review indicates that material (except crushable (Ref. Drawing 48W1700-01,RS, Note 1) honeycomb cushions and sleeves used as compressable components and penetrations) fabrication and welding was by TVA. PROBLEM/SUBJECT: UNSATIFACTORY WELD APPEARANCE.	IN-86-301-001/06B25/6.D	

	Items/Groups	Associated Documents	
207. (EC-SPL-10)	Unit 1, safety-related welds on the steam generator supports. DOE/WEP will review the associated weld procedures to verify what preheat and post-weld heat treatment requirements were invoked. If preheat is required without evidence of post-weld heat treatment evaluate using an inspection/NDE technique appropriate to detect the effects of improper preheat. PROBLEM/SUBJECT: WELD PROCEDURE NOT FOLLOWED.	IN-85-641-005/08B21/8.A WI-85-081-003/08B44/8.A	WI-85-064-002/08B45/8.A
208. (EC-SPL-11)	Unit 1, safety-related welds associated with instrument panel drain thread-o-lets to drain headers for systems 62, 63, and 68. Evaluate the documentation and certification requirements and examine the weld documentation associated with these welds. If these welds are improperly documented they will be physically evaluated using standard post-weld inspection/NDE. NOTE: DOE/WEP has determined that the drains for systems 62, 63, and 68 are located in seismic buildings and are therefore TVA Class G safety-related (ref. drawing 47W600-0-4, R21, note 18). PROBLEM/SUBJECT: WELD PROCEDURE INADEQUATE.	IN-85-143-001/08B42/8.B	IN-85-143-002/08B42A/8.B
209. (EC-SPL-12)	Unit 1, safety-related pressure boundary welds requiring post-weld heat treat using the PWHT log. Evaluate by selecting a sample of welds using the post-weld heat treat log, verifying that the temporary welds are properly documented and that they have been physically removed. NOTE: (1) If there is a listing of voided WOS's, use this list to establish special group. (2) If TVA follow-up to this concern has properly addressed the problem associated with voided weld documentation for temporary welds, this special group will be voided. PROBLEM/SUBJECT: UNDOCUMENTED TEMPORARY WELDS AND REMOVAL.	WI-85-053-003/05A05/5.B.1	
210. (EC-SPL-13)	Unit 1, safety-related welds made by welders 01A22, 01B13, 01A31-1 through 01A31-7. Evaluate using standard post-weld inspection/NDE and/or documentation review as indicated by engineering evaluation. PROBLEM/SUBJECT: BACKDATING WELDER CERTIFICATION.	IN-85-965-001/01A22/1.A.1 IN-85-770-X07/01A31/1.A.1 IN-85-965-002/01B13/1.A.1	IN-85-770-002/01A21/1.A.1 IN-85-770-003/01A16/1.A.1 IN-85-089-003/01B50/1.A.4

	Items/Groups	Associated Documents
211. (EC-SPL-14)	Unit 1, safety-related main steam piping welds. DOE/WEP will identify all welders associated with safety-related main steam welds and evaluate those qualifications made by plate test. If the qualifications were made in the flat (1G) position, evaluate all welds made by improperly certified welders using standard post-weld inspection/NDE. NOTE: (1) This group will be moved to the specific section if warranted by small group size. (2) At WEP request for more information QTC follow-up with the CI revealed that the concern was based on hearsay. The informant identified by the CI stated that he does not know anything about flat plate testing positions. PROBLEM/SUBJECT: QUESTIONABLE WELDER TRAINING/EXPERIENCE.	IN-86-190-002/01B33/1.B
212. (EC-SPL-15)	Unit 1, safety-related welds as follows: Open butt, no backing ring, radiographed, first piping welds off penetraters of containment wall. Evaluate the pipe wall thickness using an appropriate inspection/NDE technique. PROBLEM/SUBJECT: POSSIBLE MINIMUM WALL VIOLATION.	IN-85-579-005/07B51/7.B.1
213. (EC-SPL-16)	Unit 1, safety-related welds associated with the refueling pit liner. Perform an engineering evaluation of the concern by review of the records associated with the subject welds. NOTE: (1) Preliminary WEP review indicates that the subject welds were fabricated by TVA and are safety-related. (2) QTC response to DOE/WEP request to provide specific weld locations indicates that problem should be considered generically. QTC also said the refueling pit liner was the area of concern. PROBLEM/SUBJECT: WELDS DO NOT MEET ACCEPTANCE CRITERIA.	WI-85-081-004/06B50/6.B
214. (EC-SPL-17)	Unit 1, safety-related structural steel members located in the North and South Valve Room. Evaluate using an inspection/NDE technique appropriate for the detection of problems associated with improper preheat and/or subsurface cracking. PROBLEM/SUBJECT: POSSIBLE SUBSURFACE DEFECTS, WELD PROCEDURE NOT FOLLOWED.	IN-86-032-002/06A16/6.C IN-85-671-003/08B24/8.A

	Items/Groups	Associated Documents
215. (EC-SPL-18)	Unit 1, safety-related welds requiring interpass temperature control. DOE/WEP will evaluate the problem of interpass temperature control in relation to the specific plant operating parameters and make recommendations to TVA as appropriate. (This group will be combined with Group 218 for evaluation.) NOTE: (1) Preliminary WEP review indicates that the objectionable physical problem with failure to control interpass temperatures is sensitization of grade P8 stainless steel in the heat affected zone leading to increased susceptibility to stress corrosion cracking, inservice. (2) DOE/WEP requested QTC to indicate whether or not the CI knows or believes that interpass temperatures were actually exceeded and if so, to provide specific systems, welds and time frames. QTC response indicates that the CI cannot provide any information identifying welds or systems and does not recall if interpass temperatures were actually exceeded. PROBLEM/SUBJECT: WELD PROCEDURE NOT FOLLOWED FOR INTERPASS TEMPERATURE MONITORING.	IN-85-185-001/08B47/8.A IN-85-834-002/08B15/8.A
216. (EC-SPL-19)	Unit 1, safety-related piping welds. Evaluate using standard post-weld inspection/NDE with a review of the associated documentation. The employee concern and subsequent investigation identify a potential problem with use of weld records for updating welder qualification for a given procedure. (This group will be evaluated using results of general group examination; Groups A, B, and C). PROBLEM/SUBJECT: A GENERIC PROBLEM WITH WELDERS RECERTIFIED IN A QUESTIONABLE MANNER.	EX-85-021-002/01A09/1.A.2
217. (QI-SPL-1)	Unit 1, safety-related welds associated with PDO's installed prior to January 1981 that were first accepted and later found unacceptable. Inspector qualification is questionable. Did not address all protective devices. Only pipe rupture protection sleeves. Sample inspect balance of protection devices (except pipe rupture protection sleeves). (This group will be combined with Group 206 for evaluation). PROBLEM/SUBJECT: INCOMPLETE CORRECTIVE ACTION.	NCR 3523 R0, 3001 R3, 3325 R1
218. (QI-SPL-2)	Unit 1, safety-related welds requiring interpass temperature control. NRC overview item 390/78-31. Verify welders are checking interpass temperatures. (This group will be combined with Group 215 for evaluation.) PROBLEM/SUBJECT: WELDERS WERE GIVEN A TRAINING SESSION BUT THE IMPACT ON PRIOR WORK PERFORMED WAS NOT ADDRESSED. INCOMPLETE CORRECTIVE ACTION (IMPACT).	NRC overview item 390/78-31, NRC Report 78-31-02

	Items/Groups	Associated Documents
219. (QI-SPL-3)	Unit 1, safety-related welds as follows: Reinspect welds in control building on safety related duct supports (Ref NCR 2819). PROBLEM/SUBJECT: SAFETY RELATED HVAC DUCT SUPPORTS IN THE CONTROL BUILDING HAVE DEFICIENT WELDS AS STATED ON NCR 2819. (THIS NCR WAS VOIDED AND THE CONDITION TO BE INCORPORATED ONTO NCR 2576. NOTE: NCR 2576 CONCERNS BOLT HOLES IN BASE-PLATES). INCOMPLETE CORRECTIVE ACTION. NCR 2819 ADDRESSED 66 DUCT SUPPORTS.	NCR 2819, 2576.
220. (QI-SPL-4)	Unit 1, safety-related welds associated with the subject NCRs. Evaluate welds identified in the subject NCRs by performance of an engineering evaluation and/or an appropriate inspection/NDE method for determination of root quality resulting from failure to purge prior to welding. PROBLEM/SUBJECT: INCOMPLETE CORRECTIVE ACTION. PURGE NOT VERIFIED DURING WELDING. PT DONE AFTER ANI SIGNOFF NOT ADDRESSED. NCR 5493 INADEQUATE TECHNICAL JUSTIFICATION (ALSO 5385). N/A IN PURGE VERIFICATION BLOCK ON WOS SHEET.	NCR 5211, 5093, 5493, 5385, 5389, 5164.
221. (QI-SPL-5)	Unit 1, safety-related welds associated with the subject NCR. Evaluate adequacy of the sample plan used for NCR 2375R. PROBLEM/SUBJECT: SAMPLE SIZE WAS REDUCED FROM 106 DRAWINGS TO 57 WITHOUT STATISTICAL VALIDATION TO WARRANT THE REDUCTION. INCOMPLETE TECHNICAL JUSTIFICATION.	NCR 2375R.
222. (QI-SPL-6)	Unit 1, safety-related welds as follows: Platforms, ladders, and stairs in Category 1 structures erected and documented prior to January 1, 1981. Sample above items fabricated, installed, and inspected prior to January 1, 1981. PROBLEM/SUBJECT: FAILURE TO CONSTRUCT AND INSPECT PER DESIGN. INADEQUATE TECHNICAL JUSTIFICATION. (3579 NOT CLOSED).	NCR 3579 R0, 8/24/81.
223. (QI-SPL-7)	Unit 1, safety-related welds associated with the subject NCR. Inspector transferred from another site to Watts Bar Plant. His prior L-II certification was revoked and he was not immediately recertified upon starting inspections at WBNP. All hangers inspected while uncertified were reinspected but results of this re-inspection is indeterminate. Review documentation to determine status. PROBLEM/SUBJECT: INCOMPLETE TECHNICAL JUSTIFICATION.	NCR 4374 R0.
224. (QI-SPL-8)	Unit 1, safety-related pipe pressure boundary. All PBW's (lugs). Evaluate using an appropriate inspection/NDE method. PROBLEM/SUBJECT: HANGER LUG WELDS FAIL TO COMPLY WITH FINAL VISUAL ACCEPTANCE CRITERIA. INCOMPLETE CORRECTIVE ACTION BASED ON NO ASSESSMENT OF IMPACT (TREND). (3632R)	NCR 4625, 4759, 4574R, 5962R, 5492R, 3745R, 5559R, 5177R1, 4985R, 4483R, 4507R, 5435R, 5946R, 2064R, 2065R, 3776R1, 5308R, 3632R, 2451, 2882, 3257, 3632, 4301.

WEP IDENTIFIED HOMOGENEOUS GROUPS (continued)

	Items/Groups	Associated Documents
225. (QI-SPL-9)	Unit 1, safety-related welds as follows: Reinspect all conduit supports on Elevation 708 control building per 47A056 and 47A050 series drawings. 1. Verify associated documentation is in vault as noted on NCR. 2. If documentation is not available and satisfactory, implement reinspection. PROBLEM/SUBJECT: WELDING DOES NOT MEET INSPECTION CRITERIA. INCOMPLETE CORRECTIVE ACTION-NO IMPACT ASSESSMENT-NOT CLEAR THAT REINSPECTION/REWORK WAS ACCOMPLISHED.	NCR 2629.
226. (QI-SPL-10)	Unit 1, safety-related piping where weld beads were utilized for alignment purposes. Perform engineering evaluation to assess use of alignment beads. PROBLEM/SUBJECT: UNAUTHORIZED AND UNDOCUMENTATED ALIGNMENT BEAD WELDS. INCOMPLETE CORRECTION ACTION. NO ASSESSMENT OF IMPACT.	Enforcement Item #390/79-25-01.
227. (QI-SPL-11)	Unit 1, safety-related welds as follows: Stiffener and crossbracing welds on surge line truss, Drawing 48W1703-06R2, -05R5, 07R3, and 08R2. Disposition not adequate. Reinspect all stiffener and crossbracing welds to current drawing criteria. PROBLEM/SUBJECT: IMPROPER FIT-UP AND QC ACCEPTANCE. INCOMPLETE CORRECTIVE ACTION. ASSESS OTHER AREAS OF PLANT FOR SIMILAR PROBLEM. (IMPACT, TREND).	NCR-3302 REV 0.
228. (EC-SPL-20)	Unit 1 safety-related welds attaching check valves into the six inch fire protection system piping. Evaluate using standard post-weld inspection/NDE to detect incomplete welds. PROBLEM/SUBJECT: INCOMPLETE WELDS.	EX-85-020-001/06B78/6.B
229. (EC-SPL-21)	Unit 1 safety-related welds (TVA welded) on steam generator supports. Examine using an inspection/NDE technique appropriate to detect subsurface defects. PROBLEM/SUBJECT: SUBSURFACE SLAG INCLUSIONS.	IN-86-184-001/06B80/6.C IN-86-184-003/07B25/7.A.2
230. (QI-SPL-12)	Unit 1, safety-related welds on seismic pipe sleeve hanger supports in which the configuration is similar to that shown on Drawing 70-1Cc-R487. Evaluate using appropriate inspection/NDE criteria. PROBLEM/SUBJECT: LACK OF WELD, SLAG INCLUSION, LACK OF FUSION, UNDERCUT, WELD SPATTER.	NCR 4477R

	Items/Groups	Associated Documents	
231. (EC-SPL-22)	Unit 1, safety-related welds associated with box anchors. Perform an engineering evaluation of the subject welds and the detrimental effects of the weld run-in at the end plate seam welds and thermal stress resulting from excessive weld size at the end plate to pipe attachment weld. PROBLEM/SUBJECT: WELD RUN-IN, RESIDUAL THERMAL STRESS.	IN-85-634-002/08B32/8.B EX-85-039-003/09A02/9.A.1 IN-85-613-001/09B13/9.A.1 IN-85-634-001/09B14/9.A.1 IN-85-316-005/09B38/9.A.1	IN-85-405-001/09B16/9.A.1 WBP-6-007-001/09B35/9.A.1 OW-85-003-001/09B36/9.A.1 IN-85-672-001/09B15/9.A.1
232. (EC-SPL-23)	Unit 1, safety-related pipe support welds. Evaluate using standard post-weld inspection/NDE and review associated documentation. (This group will be evaluated using results of general examination; Group F.) PROBLEM/SUBJECT: INADEQUATE INSPECTOR/CRAFT TRAINING, QUESTIONABLE WELD QUALITY AND INSPECTION PRACTICE, AND CONFLICTING PROCEDURES/DRAWINGS.	IN-85-532-006/07A04/7.A.2 IN-85-682-002/07B59/7.A.2	EX-85-037-002/01B45/1.A.4 IN-85-707-003/01B08/1.B
233. (EC-SPL-24)	Unit 1, safety-related piping welds. Evaluate using standard post-weld inspection/NDE and review associated documentation. (This group will be evaluated using results of general examination; Groups A, B, and C.) PROBLEM/SUBJECT: GENERIC PROBLEMS WITH QUESTIONABLE WELD DOCUMENTATION, QUESTIONABLE WELDING PARAMETERS USED, QUESTIONABLE WELDER QUALIFICATION AND EQUIPMENT SUITABILITY, QUESTIONABLE BASE MATERIAL, AND QUESTIONABLE WELD QUALITY.	IN-85-469-003/08B33/8.B IN-85-247-002/08B01/8.C IN-85-298-002/08B06/8.C IN-85-280-001/08B07/8.C IN-85-982-003/08B35/8.D IN-86-184-004/08A04/8.D IN-86-249-X02/08A07/8.D WI-85-035-007/01A57/1.A.4 EX-85-048-004/01B27/1.A.4 IN-85-923-002/01B42/1.A.4 IN-85-282-002/07A05/7.B.1 IN-85-947-X08/01B12/1.B IN-85-260-X05/05A23/5.B.2 IN-85-406-001/05A01/5.A.1 EX-85-003-003/05A08/5.A.1 IN-85-445-002/05A02/5.A.1 HI-85-040-001/05A03/5.A.1 IN-85-627-036/01A49/1.A.1 IN-85-627-037/01A53/1.A.1 IN-85-458-007/05A04/5.A.1 IN-85-460-003/04A02/4.A IN-86-046-003/08B23/8.B IN-86-184-002/08A05/8.D EX-85-003-X04/05B47/5.A.1	IN-85-556-001/01A37/1.A.4 IN-85-260-002/05A22/5.B.2 WI-85-035-002/05B21/5.B.2 IN-85-260-001/05A21/5.B.2 WI-85-064-001/05B27/5.B.3 IN-85-435-003/09B27/9.B.4 IN-86-085-003/09B09/9.C.1 WI-85-030-006/09B18/9.B.1 IN-85-310-004/07B39/7.A.2 IN-85-155-001/06B02/6.D EX-85-037-003/06B29/6.D IN-85-845-004/06A04/6.E IN-85-632-001/06B10/6.C IN-85-303-001/08B04/8.C IN-85-576-001/05A12/5.A.1 IN-85-890-001/05A10/5.A.1 WI-85-064-006/05B13/5.A.1 WI-85-025-001/05A14/5.A.1 IN-85-446-001/05A11/5.A.1 EX-85-003-X06/05A13/5.A.1 IN-85-579-001/06A07/6.A IN-85-349-005/06B32/6.A WI-85-081-005/06B64/6.B
234. (EC-SPL-25)	Fitup verification for civil structural welds. Perform an engineering evaluation of applicable code requirements and TVA procedures utilized for fitup verification. (This group will be combined with Group 236 for evaluation.) PROBLEM/SUBJECT: CRAFT RESPONSIBLE FOR FITUP.	WBM-5-001-001/07B63/7.B.2	IN-85-026-001/07A13/7.B.2

WEP IDENTIFIED HOMOGENEOUS GROUPS (continued)

	Items/Groups	Associated Documents	
235. (EC-SPL-26)	Unit 1, safety-related electrical support welds. Evaluate using standard post-weld inspection/NDE and review associated documentation. (This group will be evaluated using results of general examination; Groups I and J.) PROBLEM/SUBJECT: QUESTIONABLE WELDER QUALIFICATION AND QUESTIONABLE INSPECTOR TRAINING.	IN-85-225-001/01B02/1.B	IN-85-706-002/02A05/2.B
236. (EC-SPL-27)	Fitup verification for structural welds. Perform an engineering evalution of applicable code requirements and TVA procedures utilized for fitup verification. (This group will be combined with Group 234 for evaluation.) PROBLEM/SUBJECT: NO DOCUMENTATION FOR SURVEILLANCE PROGRAM. INSPECTION OF FITUP BY QC DELETED.	IN-85-001-006/07B45/7.B.2 IN-85-488-001/07B46/7.B.2 IN-85-584-001/07A09/7.B.2 IN-85-887-003/05B26/5.C.1	WI-85-041-013/07B58/7.B.2 WI-85-013-002/07B54/7.B.2 IN-85-671-001/07A11/7.B.2 IN-85-052-007/07A12/7.B.2 IN-85-052-006/07A10/7.B.2
237. (QI-SPL-13)	Unit 1, safety-related structural components utilizing skewed fillet welds. Evaluate using appropriate weld inspection/NDE criteria. (This group will be evaluated using results of general examination; Groups D-L and 254.) PROBLEM/SUBJECT: A GENERIC PROBLEM WITH LACK OF KNOWLEDGE OF ACCEPTANCE CRITERIA.	NCR 2807.	
238. (QI-SPL-14)	Unit 1, safety-related welds requiring PT examination. Evaluate using standard post-weld NDE and review of associated documentation. (This group will be evaluated using results of general examination; Groups A and B.) PROBLEM/SUBJECT: A GENERIC PROBLEM WITH LACK OF KNOWLEDGE OF THE ACCEPTANCE CRITERIA.	NRC enforcement item 390/79-25-01 and 390/80-19-01.	
239. (QI-SPL-15)	Unit 1, safety-related welds required NDE examination. Evaluate using standard post-weld NDE and review of associated inspection records. (This group will be evaluated using results of general examination; Groups A and B.) PROBLEM/SUBJECT: GENERIC PROBLEM WITH NDE DOCUMENTATION VALIDITY.	NSRS Rep. #I-83-01-WBN.	
240. (QI-SPL-16)	Unit 1, safety-related welds performed requiring inert purge gas. Evaluate using appropriate nspection technique. PROBLEM/SUBJECT: WELDING WITHOUT PURGE. INCOMPLETE TECHNICAL JUSTIFICATION NEED ADDITIONAL INFORMATION.	NRC Enforcement Item #390/79-41. NRC Enforcement Item #390/78-3.	

	Items/Groups	Associated Documents
241. (QI-SPL-17)	Unit 1, safety-related civil structural steel welds. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. (This group will be evaluated using results of general examination; Groups D and E.) PROBLEM/SUBJECT: A GENERIC PROBLEM WITH WELDS PREVIOUSLY ACCEPTED AND LATER FOUND UNACCEPTABLE. INSPECTOR'S QUALIFICATION. INADEQUATE CORRECTIVE ACTION (BASED ON SEVERAL MAJOR NCRS IN VALVE ROOM, NO CONFIDENCE IN REMAINING PLANT BEING UNAFFECTED).	NCR 4753 Rev. 1, 3718 R1, 5561
242. (QI-SPL-18)	Unit 1, safety-related welds requiring visual and NDE examination. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. (This group will be evaluated using results of general examination; Groups A-L, 252, and 254.) PROBLEM/SUBJECT: TREND. A GENERIC PROBLEM WITH INSPECTORS MISSING INSPECTIONS AND LACK OF INSPECTOR'S AWARENESS OF ACCEPTANCE CRITERIA RESULTED IN ACCEPTANCE OF DEFICIENT WELDS.	NCR 2528 R0, 2529 R0, 5305 R0, 4201 R0, 4737 R0, 4909 R0, 4667 R0, 3216 R, 3443 R, 5143 Rev 0, 5246 Rev 0, 5635 Rev 0, 5604 Rev 0, 6274 Rev 0.
243. (QI-SPL-19)	Unit 1, safety-related structural components; as-built configuration. Evaluate by comparison of current drawing to as-built configuration. (This group will be evaluated using results of general examination; Groups D-L, 252 and 254.) PROBLEM/SUBJECT: GENERIC PROBLEM WITH STRUCTURAL AND MISCELLANEOUS FEATURES NOT CONFORMING TO THE DRAWINGS. REPORT DEALS WITH PLATFORM, STAIRS, AND LADDERS MAINLY WITH CONNECTION DETAILS AND WELDS WHICH ARE DIFFERENT FROM THE ORIGINAL DESIGN. INCOMPLETE CORRECTIVE ACTION.	50.55(e). WBRD-50-390/81-75. NCRs 2375R.
244. (QI-SPL-20)	Unit 1, safety-related welds. Review documentation for quality conformance, authenticity, and adequacy. (This group will be evaluated using results of general examination; Groups A-L, 252 and 254.) PROBLEM/SUBJECT: TREND. GENERIC PROBLEM WITH INSUFFICIENT, LOST, INCOMPLETE DOCUMENTATION TREND-DOCUMENTATION PROBLEM.	NCR's 2013, 2134, 2191, 2196, 2344, 2999R1, 3101, 3104, 3133, 3134, 3139, 3179, 3244, 3377, 3385, 3456, 3468, 3548, 3593, 3613, 3621, 3645, 3654, 3732R1, 5384R2, 5452, 5459R1, 5580, 5613, 5788, 5808.
245. (QI-SPL-21)	Unit 1, safety-related pipe pressure boundary; ANSI pipe lugs. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. (This group will be evaluated using results of general examination; Group C.) PROBLEM/SUBJECT: GENERIC PROBLEM WITH ANSI LUGS INSTALLED INCORRECTLY, INSPECTIONS PERFORMED INCORRECTLY AND THE SAME PROBLEMS REOCCURRED AFTER RETRAINING OF RESPONSIBLE CRAFT AND ENGINEERING PERSONNEL. INCOMPLETE TECHNICAL JUSTIFICATION.	NCR's 2451, 2882, 3257, 3632, 4301.
246. (EC-SPL-2)	Unit 1, safety-related welds associated with electrical supports fabricated prior to February 13, 1981. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. (This group will be evaluated using results of general examination; Group J.) PROBLEM/SUBJECT: POSSIBLE INCORRECTLY APPLIED ACCEPTANCE CRITERIA.	IN-85-887-001/05A20/5.C.1 WI-85-041-003/05A19/5.C.1 EX-85-076-001/06B43/6.B IN-86-019-003/06B24/6.D WI-85-030-004/09A14/9.B.3

WEP IDENTIFIED HOMOGENEOUS GROUPS (continued)

		Items/Groups	Associated Documents
247.	(EC-SPL-3)	Unit 1, safety-related welds associated with civil structures and miscellaneous steel installed prior to February 13, 1981. Evaluate using standard post-weld inspection/NDE. Review of supporting documentation. (This group will be evaluated using results of general examination; Group E, 252 and 254.) PROBLEM/SUBJECT: SAMPLING INSPECTION PROGRAM IMPROPERLY APPLIED.	WI-85-013-001/02A26/2.A IN-85-868-002/06B68/6.D PH-85-032-001/06B67/6.D
248.	(EC-SPL-5)	Unit 1, safety-related welds on instrument supports installed prior to February 13, 1981 and not already identified as nonconforming under NCR W-334-P Revision 0 and evaluate using standard post-weld inspection/NDE with a review of the associated weld inspection documentation. (This group will be evaluated using results of general examination; Group G and H.) PROBLEM/SUBJECT: WELD NOT PROPERLY ACCEPTED BY ENDES EVALUATION.	WI-85-029-002/07A17/7.A.4
249.	(EX-SPL-1)	Unit 1, safety related radiographed welds that the radiographic film was interpreted by the subject interpreter. Re-read to assure the absence of defects. PROBLEM/SUBJECT: ACCEPTED RADIOGRAPHS WITH DEFECTS IN EXCESS OF CODE REQUIREMENTS. THIS GROUP WAS FORMED BECAUSE OF DEFICIENCIES NOTED WHILE PERFORMING EXAMINATIONS REQUIRED BY GENERAL GROUP B.	N/A
250.	(EX-SPL-2)	Unit 1, safety-related welds associated with clips on cable trays in the Auxiliary Building 713 elevation and Unit 1 safety-related clips on trays fabricated and installed before February 13, 1981. Evaluate for acceptable weld profile. (This group is formed based on causal analysis of examination data from Groups 202 and J). PROBLEM/SUBJECT: WELD PROFILE	N/A
251.	(EX-SPL-3)	Unit 1, safety-related welds associated with electrical supports in the Auxiliary Building 713 elevation. Conduit supports on Elevation 708 in the control building and installed before February 13, 1981. Cable tray clips shall be excluded from this group because they are being evaluated in Group 250. Evaluate for weld size, profile, length and location. (This group is formed based on causal analysis of examination data from Groups 202,225 and J). PROBLEM/SUBJECT: WELD PROFILE, WELD LENGTH, WELD SIZE, AND WELD LOCATION	N/A
252.	(EX-SPL-4)	Unit 1, safety-related welds associated with mechanical equipment and related supports requiring welding by TVA. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE THE SUBJECT WELD POPULATION IS NOT CURRENTLY INCLUDED WITHIN THE WEP GENERAL GROUPS FORMULATED TO ADDRESS THE OVERALL WBNP WELD POPULATION.	N/A

		Items/Groups	Associated Documents
253.	(EX-SPL-5)	Unit 1, safety-related welds radiographically examined by TVA. Reread to assure acceptability of film quality and proper interpretation. PROBLEM/SUBJECT: EXAMINATIONS BEING PERFORMED PER THE REQUIREMENTS OF GENERAL GROUPS A AND B IDENTIFIED PROBLEMS WITH TVA RADIOGRAPHIC FILM INTERPRETATION. RADIOGRAPHIC FILM EXHIBITS PROBLEMS WITH GEOMETRIC UNSHARPNESS AND MISSINTERPRETATION OF DEFECTS.	N/A
254.	(EX-SPL-6)	Unit 1, safety-related electrical equipment and related support welds made by TVA. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE THE SUBJECT WELD POPULATIONS ARE NOT CURRENTLY INCLUDED WITHIN THE WEP GENERAL GROUPS FORMULATED TO ADDRESS THE OVERALL WBNP WELD POPULATION.	N/A
255.	(EX-SPL-7)	Unit 1, safety-related support bracing located on Elevation 741 of the Control Building and all similar safety-related civil structural bracing and associated welds. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF UNSUITABLE-FOR-SERVICE CONCLUSION FOR DEFICIENT WELDS ON SUBJECT COMPONENTS DURING EXAMINATION OF GENERAL GROUP E.	N/A
256.	(EX-SPL-8)	Unit 1, safety-related mainframe structural floor beams, related beam connections and similar components and associated welds that were inspected by a certain individual. Evaluate using standard post-weld inspection/NDE with a review of supporting documentation. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF UNSUITABLE-FOR-SERVICE CONCLUSIONS FOR DEFICIENT WELDS ON THE SUBJECT COMPONENTS THAT WERE INSPECTED BY AN IDENTIFIED INDIVIDUAL. THE SUBJECT GROUP WAS IDENTIFIED DURING EXAMINATION OF GENERAL GROUP E.	N/A
257.	(EX-SPL-9)	Unit 1, safety-related welds associated with the stainless steel fuel pool, transfer and refueling canals and the reactor well areas. Evalute using standard post-weld inspection/NDE with a review of supporting documentation. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE THE SUBJECT WELD POPULATION IS NOT CURRENTLY INCLUDED WITHIN THE WEP GENERAL GROUPS FORMULATED TO ADDRESS THE THE OVERALL WBNP WELD POPULATION.	N/A
258.	(EX-SPL-10)	Radiographic film for Unit 1 safety-related welds not previously interpreted by DOE/WEP. PROBLEM/SUBJECT: THIS GROUP IS FORMED BASED ON THE IDENTIFIED NEED TO REVIEW RADIOGRAPHIC FILM BECAUSE OF DEFICIENCIES DETECTED IN OTHER DOE/WEP GROUPS.	N/A

		Items/Groups	Associated Documents
259.	(EX-SPL-11)	Unit 1, safety-related welds on instrument supports, including, but not limited to, instrument panel board mounting, fabricated prior to February 13, 1981 and inspected by the subject inspector. Evaluate using standard post weld inspection/NDE. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF GENERIC PROBLEM AND CAUSAL EFFECTS ANALYSIS OF DEVIATIONS IDENTIFIED WHILE EVALUATING EXAMINATION DATA FROM GENERAL GROUP H.	N/A
260.	(EX-SPL-12)	Unit 1, safety-related Civil, Main Structural Framework and associated welds installed subsequent to February 13, 1981. Evaluate using standard post weld inspection/NDE. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF GENERIC PROBLEM AND CAUSAL EFFECTS ANALYSIS OF DEVIATIONS IDENTIFIED WHILE EVALUATING EXAMINATION DATA FROM GENERAL GROUP "D".	N/A
261.	(EX-SPL-13)	Unit 1, safety-related stiffener and crossbracing welds on surge line truss, Drawings 48W1703-06R2, 05R5, 07R3, and 08R2. Evaluate all remaining welds not previously inspected in Group 227, per current drawing criteria. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF GENERIC PROBLEM AND CAUSAL EFFECTS ANALYSIS OF DEVIATIONS IDENTIFIED WHILE EVALUATING EXAMINATION DATA FROM SPECIAL GROUP 227.	N/A
262.	(EX-SPL-14)	Unit 1, ASME Section III, Class 1 and 2 small bore piping welds, (2 inch nominal pipe diameter and less) welded utilizing the gas tungsten arc (GTAW) welding process. Evaluate using standard post weld inspection/NDE. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF GENERIC PROBLEM AND CAUSAL EFFECTS ANALYSIS OF DEVIATIONS IDENTIFIED WHILE EVALUATING EXAMINATION DATA FROM GENERAL GROUP A. A CRACK WAS DISCOVERED WHICH IS CONSIDERED TO BE A MANDATORY CODE COMPLIANCE DEVIATION.	N/A
263.	(EX-SPL-15)	Unit 1, safety-related/safety significant civil components and associated welds fabricated and installed prior to February 13, 1981. PROBLEM/SUBJECT: THIS GROUP IS FORMED TO PROVIDE EXAMINATION DATA RELATIVE TO THE SAFETY SIGNIFICANT COMPONENTS AND PROVIDE ADDED CONFIDENCE FOR EVALUATION OF CIVIL COMPONENTS.	N/A
264.	(EX-SPL-16)	ASME, Section III, Class MC (Metal Containment) welds. Evaluate using standard post-weld inspection/NDE with a review of the associated documentation. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE THE SUBJECT WELD POPULATION IS NOT CURRENTLY INCLUDED WITHIN THE WEP GENERAL GROUPS FORMULATED TO ADDRESS THE OVERALL WBNP WELD POPULATION.	N/A

	Items/Groups	Associated Documents
265. (EX-SPL-17)	Unit 1, safety-related instrument support welds fabricated and installed subsequent to February 13, 1981. Evaluate welds for weld size, profile, length and location. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF GENERIC PROBLEM AND CAUSAL EFFECTS ANALYSIS OF THE DEVIANT CONDITIONS IDENTIFIED WHILE EVALUATING EXAMINATION DATA FROM GENERAL GROUP G.	N/A
266. (EX-SPL-18)	Unit 1, safety-related electrical equipment and supports utilizing tube steel for bracing and supporting cable trays. Evaluate welds for size, profile, length, and location. PROBLEM/SUBJECT: THIS GROUP IS FORMED BECAUSE OF GENERIC PROBLEM AND CAUSAL EFFECTS ANALYSIS OF THE DEVIANT CONDITIONS IDENTIFIED WHILE EVALUATING EXAMINATION DATA FROM SPECIAL GROUP 254.	N/A
A.	Unit 1, ASME Section III, Class 1, 2, and 3 small bore piping, (2 inch nominal diameter and less), TVA Class A, B, C, and D. Evaluate using standard post-weld inspection/NDE.	N/A
B.	Unit 1, ASME Section III, Class 1, 2, and 3 large bore piping, (2 inch nominal diameter and larger), TVA Class A, B, C, and D. Evaluate using standard post-weld inspection/NDE.	N/A
C.	Unit 1, ANSI B31.1, Power Piping, TVA Classes G, H, M and N and ANSI B31.5, Refrigeration Piping, TVA Classes M and N. Evaluate using standard post-weld inspection/NDE.	N/A
D.	Unit 1, safety-related Civil welds made subsequent to February 13 1981 including, but not limited to structural steel, ladders, walkways, doors, door frames, protective devices (PDOs), platforms, and imbeds. Evaluate using standard post-weld inspection/NDE.	N/A
E.	Unit 1, safety-related Civil welds made prior to February 13, 1981, including, but not limited to structural steel, ladders, walkways, doors, door frames, protective devices (PDOs), platforms, and imbeds. Evaluate using standard post-weld inspection/NDE.	N/A
F.	Unit 1, safety-related pipe support welds. Evaluate using standard post-weld inspection/NDE.	N/A
G.	Unit 1, safety-related instrument supports, including, but not limited to, instrument panel board mounting, fabricated and installed subsequent to February 13, 1981. Evaluate using standard post-weld inspection/NDE.	N/A
H.	Unit 1, safety-related instrument supports, including, but not limited to, instrument panel board mounting, fabricated and installed prior to February 13, 1981. Evaluate using standard post-weld inspection/NDE.	N/A
I.	Unit 1, safety-related electrical supports, including, but not limited to, MCC monitoring, switchgear mounting, electrical equipment mounting, cable tray supports and conduit supports, fabricated and installed subsequent to February 13, 1981. Evaluate using standard post-weld inspection/NDE.	N/A

WEP IDENTIFIED HOMOGENEOUS GROUPS (continued)

Items/Groups	Associated Documents
J. Unit 1, safety-related electrical supports, including, but not limited to, MCC monitoring, switchgear mounting, electrical equipment mounting cable tray supports and conduit supports, fabricated and installed prior to February 13, 1981. Evaluate using standard post-weld inspection/NDE.	N/A
K. Unit 1, safety-related duct supports, including HVAC equipment supports, fabricated and installed subsequent to February 13, 1981. Evaluate using standard post-weld inspection/NDE.	N/A
L. Unit 1, safety-related duct supports, including HVAC equipment supports, fabricated and installed prior to February 13, 1981. Evaluate using standard post-weld inspection/NDE.	N/A
M. Unit 1, safety-related HVAC ductwork systems. DOE/WEP will evaluate TVA technical justifications for HVAC weld acceptance criteria and/or methods and determine the appropriate action to assess systems acceptability.	N/A

METHOD OF EVALUATION

Group Number and/or Origin	Method of Investigation/Verification: Document Review	Engineering Evaluation	Document Review/ Examination	Inspection/ Examination
1. (EC-SP-1)	X	--	--	--
2. (EC-SP-2)	--	--	--	X
3. (EC-SP-3)	--	--	--	X
4. (EC-SP-4)	--	--	--	X
5. (EC-SP-5)	X	--	--	--
6. (EC-SP-6)	--	--	--	X
7. (EC-SP-7)	X	--	--	--
8. (EC-SP-8)	--	--	--	X
9. (EC-SP-9)	--	--	X	--
10. (EC-SP-10)	--	X	--	--
11. (EC-SP-11)	X	--	--	--
12. (EC-SP-12)	--	--	--	X
13. (EC-SP-13)	--	--	--	X
14. (EC-SP-14)	--	--	--	X
15. (QI-SP-2)	--	--	X	--
16. (QI-SP-3)	X	--	--	--
17. (QI-SP-4)	X	--	--	--
18. (QI-SP-5)	--	--	X	--
19. (QI-SP-6)	X	--	--	--
20. (QI-SP-7)	--	--	X	--
21. (QI-SP-8)	--	--	--	X
22. (QI-SP-9)	--	--	--	X
23. (QI-SP-10)	X	--	--	--
24. (QI-SP-11)	--	--	--	X
25. (QI-SP-12)	X	--	--	--
26. (QI-SP-13)	--	--	--	X
27. (QI-SP-14)	X	--	--	--
28. (QI-SP-15)	X	--	--	--
29. (QI-SP-16)	--	--	X	--
30. (QI-SP-17)	X	--	--	--
31. (QI-SP-18)	--	X	--	--
32. (QI-SP-19)	--	--	--	X
33. (EC-SP-16)	--	--	--	X
34. (EC-SP-17)	--	--	--	X
35. (EC-SP-15) (General Group M)	--	X	--	--
36. (QI-SP-1)	X	--	--	--

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METHOD OF EVALUATION (continued)

Group Number and/or Origin	Method of Investigation/Verification: Document Review	Engineering Evaluation	Document Review/ Examination	Inspection/ Examination
201. (EC-SPL-1)	--	X	--	--
202. (EC-SPL-4)	--	--	--	X
203. (EC-SPL-6)	--	--	--	X
204. (EC-SPL-7)	X	--	--	--
205. (EC-SPL-8) (General Groups D, F, G, I and K)	--	--	--	X
206. (EC-SPL-9) (Combined with No. 217)	--	--	X	--
207. (EC-SPL-10)	--	--	--	X
208. (EC-SPL-11)	--	--	--	X
209. (EC-SPL-12)	--	X	--	--
210. (EC-SPL-13)	--	--	--	X
211. (EC-SPL-14)	X	--	--	--
212. (EC-SPL-15)	--	--	--	X
213. (EC-SPL-16)	X	--	--	--
214. (EC-SPL-17)	--	--	--	X
215. (EC-SPL-18) (Combined with No. 218)	--	X	--	--
216. (EC-SPL-19) (General Groups A, B,and C)	--	--	--	X
217. (QI-SPL-1) (Combined with No. 206)	--	--	X	--
218. (QI-SPL-2) (Combined with No. 215)	--	X	--	--
219. (QI-SPL-3)	--	--	--	X
220. (QI-SPL-4)	--	--	--	X
221. (QI-SPL-5)	X	--	--	--
222. (QI-SPL-6)	--	--	--	X
223. (QI-SPL-7)	X	--	--	--
224. (QI-SPL-8)	--	--	--	X
225. (QI-SPL-9)	--	--	X	--
226. (QI-SPL-10)	X	--	--	--
227. (QI-SPL-11)	--	--	--	X
228. (EC-SPL-20)	--	--	--	X
229. (EC-SPL-21)	--	--	--	X
230. (QI-SPL-12)	--	--	--	X
231. (EC-SPL-22)	--	X	--	--
232. (EC-SPL-23) (General Group F)	--	--	--	X
233. (EC-SPL-24) (General Groups A, B, and C)	--	--	--	X
234. (EC-SPL-25) (combined with No. 236)	X	--	--	--
235. (EC-SPL-26) (General Groups I and J)	--	--	--	X

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METHOD OF EVALUATION (continued)

Group Number and/or Origin	Method of Investigation/Verification: Document Review	Engineering Evaluation	Document Review/ Examination	Inspection/ Examination
236. (EC-SPL-27) (combined with No. 234)	X	--	--	--
237. (QI-SPL-13) (General Groups D - L and 254)	--	--	--	X
238. (QI-SPL-14) (General Groups A and B)	--	--	--	X
239. (QI-SPL-15) (General Groups A and B)	--	--	--	X
240. (QI-SPL-16)	X	--	--	--
241. (QI-SPL-17) (General Groups D and E)	--	--	--	X
242. (QI-SPL-18) (General Groups A - L, 252 and 254)	--	--	--	X
243. (QI-SPL-19) (General Groups D - L, 252 and 254)	--	--	--	X
244. (QI-SPL-20) (General Groups A - L, 252 and 254)	--	--	--	X
245. (QI-SPL-21) (General Group C)	--	--	--	X
246. EC-SPL-2 (General Group J)	--	--	--	X
247. EC-SPL-3 (General Group E, 252 and 254)	--	--	--	X
248. EC-SPL-5 (General Groups G and H)	--	--	--	X
249. (EX-SPL-1)	X	--	--	--
250. (EX-SPL-2)	--	--	--	X
251. (EX-SPL-3)	--	--	--	X
252. (EX-SPL-4)	--	--	--	X
253. (EX-SPL-5)	X	--	--	--
254. (EX-SPL-6)	--	--	--	X
255. (EX-SPL-7)	--	--	--	X
256. (EX-SPL-8)	--	--	--	X
257. (EX-SPL-9)	--	--	--	X
258. (EX-SPL-10)	X	--	--	--
259. (EX-SPL-11) (group Cancelled)	--	X	--	--
260. (EX-SPL-12)	--	--	--	X
261. (EX-SPL-13)	--	--	--	X
262. (EX-SPL-14)	--	--	--	X
263. (EX-SPL-15)	--	--	--	X
264. (EX-SPL-16)	--	--	--	X
265. (EX-SPL-17)	--	--	--	X
266. (EX-SPL-18)	--	--	--	X
"A" ASME (Small Bore)	--	--	--	X
"B" ASME (Large Bore)	--	--	--	X
"C" ANSI B31.1 and B31.5	--	--	--	X
"D" Civil (Subsequent to February 13 1981)	--	--	--	X
"E" Civil (Prior to February 13, 1981), Coincides with EC-SPL-3,	--	--	--	X
"F" Pipe Supports	--	--	--	X

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METHOD OF EVALUATION (continued)

Group Number and/or Origin	Method of Investigation/Verification			
	Document Review	Engineering Evaluation	Document Review/ Examination	Inspection/ Examination
"G" I&C Supports (Subsequent to February 13, 1981)	--	--	--	X
"H" I&C Supports (Prior to February 13, 1981), Coincides with EP-SPL-5	--	--	--	X
"I" Electrical Supports (Subsequent to February 13, 1981)	--	--	--	X
"J" Electrical SUpports (Prior to (Prior to February 13, 1981), Coincides with EC-SPL-2	--	--	--	X
"K" HVAC Supports (Subsequent to February 13, 1981)	--	--	--	X
"L" HVAC Supports (Prior to February 13, 1981)	--	--	--	X
"M" HVAC Duct, Coincides with EC-SP-15	--	X	--	--
Method of Investigation/Verification Totals	25	10	8	72

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APPENDIX A

STANDARD PRACTICE WEP 3.1.3, "ESTABLISHING HOMOGENEOUS GROUPS AND BOUNDARIES"

1. PURPOSE AND SCOPE

To define the process for selection and evaluation of welds. This process will be implemented through homogeneous groups that are developed from one of the following sources: employee concerns, miscellaneous quality indicator reports, a general selection of all safety-related welds not addressed by the other sources, and additional data and analysis from Weld Evaluation Project evaluations. Once the homogeneous groups are defined, they are further refined by a bounding process.

2. RESPONSIBILITY AND PRACTICE

2.1 Technical Program (TP) Component Selection (CS) shall prepare and maintain the Component Data Base in accordance with Standard Practice (SP) WEP 3.1.2.

2.2 Employee Concern/Quality Indicator Assessment (EC/QIA) personnel shall establish homogeneous groups from employee concerns, miscellaneous quality indicator reports, and the general selection, as directed in Appendixes A, B, and C, respectively. EC/QIA shall also prepare and establish groups due to rebounding and additions in accordance with Appendixes D and E.

2.3 EC/QIA shall bound the homogeneous groups by considering, as an example, the following criteria:

a. Assignment of these groups should maximize the isolation of welds or components associated with each suspected problem

b. Homogeneous groups with common component populations shall be consolidated to maximize the number of problems addressed by each group.

2.4 EC/QIA shall develop a master list of homogeneous groups and boundaries including the data from all four sources.

2.5 The EC/QIA Manager shall approve the master list.

2.6 Project Administration and Control (PAC) shall control the master list of homogeneous groups as a quality document and assign unique identifiers.

2.7 EC/QIA shall establish an approach for examining the individual homogeneous groups in accordance with SP WEP 3.1.9.

3. DEFINITIONS

Homogeneous Groups--Groups of components that are evaluated as having common weld quality.

4. REFERENCES

4.1 Standard Practice WEP 3.1.2, "Preparing, Verifying, Populating, and Maintaining the Component Data Base."

4.2 Standard Practice WEP 3.1.4, "Establishing a Homogeneous Group Assessment Plan."

4.3 Standard Practice WEP 3.1.6, "Identifying Random Samples From Homogeneous Groups."

APPENDIX A

ESTABLISHING HOMOGENEOUS GROUPS
FROM EMPLOYEE CONCERNS

1. The Employee Concern/Quality Indicator Assessment (EC/QIA) group shall generate a master list of all Tennessee Valley Authority (TVA) employee concerns to be considered by the Weld Evaluation Project (WEP).

2. Employee Concern/Quality Indicator Assessment (EC/QIA) shall assess each of the concerns appearing on the approved employee concern list to ensure compatibility with the objectives and commitments of WEP as described in the Project Management Plan. The following concerns shall be eliminated from further consideration:

   a. Those that are associated only with welding programs of organizations other than TVA

   b. Those that are limited to systems or components which are not safety-related as defined by the TVA Watts Bar Nuclear (WBN) Final Safety Analysis Report (FSAR) and implementing TVA drawings and specifications

   c. Those associated with problems which do not imply a violation of the welding program requirements invoked by the TVA WBN FSAR and implementing TVA drawings and specifications

   d. Those that reflect obvious misperception of actual conditions.

3. EC/QIA shall group the remaining employee concerns into categories:

   a. Categories shall be based on subjects such as the following and uniquely identified:

      1. Welder certification/qualification

      2. Inspector qualification/certification

      3. Weld filler control

      4. Base metal/material

      5. Documentation

      6. Workmanship/specific weld characteristics

      7. NDE processes/procedures

      8. Weld processes/procedures

      9. Other concerns relating to welding.

4. EC/QIA shall further categorize the individual items identified:

   a. Specific--A group of components formed to address a specific problem and that will be 100% evaluated

   b. Special--A group of components formed to address a specific problem that will be statistically evaluated.

5. EC/QIA shall refine these categories to bounded homogeneous groups considering the following criteria, as appropriate:

   a. Assignment of these groups should maximize the isolation of welds or components associated with each suspected problem

   b. Homogeneous groups with common component populations shall be consolidated to maximize the number of problems addressed by each group.

APPENDIX B

ESTABLISHING HOMOGENEOUS GROUPS
FROM MISCELLANEOUS QUALITY INDICATOR REPORTS

1. The term miscellaneous quality indicator reports shall include but not be restricted to the following:

   Stop Work Order (SWO)
   NRC-identified overview problems
   INPO findings
   Authorized Inspection Agency SIS reports
   Findings from the Black and Veatch review
   10 CRF 50.55(e) reports
   Allegations to NRC
   Significant Conditions Reports (SCR)
   Preoperational Test Deficiency Reports (PTDR)
   Corrective Action Reports (CAR)
   Nonconformance Reports (NCR)

2. The Employee Concerns/Quality Indicator Assessment (EC/QIA) group shall gather miscellaneous quality indicator reports for evaluation.

3. EC/QIA shall separate the welding-related miscellaneous quality indicator reports by category.

4. EC/QIA shall assign a cognizant quality engineer to evaluate each individual category.

5. The responsible quality engineer shall evaluate the miscellaneous quality indicator reports according to the following criteria:

   a. Verify that disposition of nonconformance was provided

   b. Verify that the disposition was implemented

   c. Review the disposition and verify that if additional noncompliant welds were indicated in the nonconformance description, that the miscellaneous quality indicator report disposition corrected all of the noncompliant welds

   d. Categorize the subjects of the miscellaneous quality indicator reports for detection of trends

   e. Identify and review for adequacy, any miscellaneous quality indicator reports with technical justifications having as-is dispositions.

6. EC/QIA shall categorize as follows the individual problems identified in the homogeneous groups:

   a. Specific--A group of components formed to address a specific problem and that will be 100% evaluated.

   b. Special--A group of components formed to address a specific problem that will be statistically evaluated.

APPENDIX C

ESTABLISHING HOMOGENEOUS GROUPS
FROM THE GENERAL SELECTION

1. Using the data base prepared according to Standard Practice WEP 3.1.2, The Employee Concern/Quality Indicator Assessment (EC/QIA) personnel shall separate the plant safety-related welds into three categories: (1) pipe welds, (2) structural welds, and (3) HVAC duct.

2. EC/QIA personnel shall separate these four categories to establish homogeneous groups:

   a. Divide pipe welds into three basic groups:

      1. ASME large bore

      2. ASME small bore

      3. ANSI B31.1, B31.5.

   b. AWS structural welding basically uses the same process throughout; therefore, separate this category into five groups by discipline (application) as follows:

      1. Welds associated with civil structural welds

      2. Welds associated with piping systems hangers and supports

      3. Instrumentation supports and hangers

      4. Welds associated with electrical

      5. Welds associated with HVAC system supports and hangers.

   c. HVAC duct.

3. EC/QIA personnel shall further divide the homogeneous groups identified in Paragraph 2, above, by time periods that reflect major occurrences which may have had an effect on the way welds were produced and/or accepted.

APPENDIX D

ESTABLISHING REBOUNDED OR EXPANSION GROUPS
FROM WEP INSPECTION RESULTS

Data Analysis Program (DAP) shall establish rebounded homogeneous groups considering the following criteria, as appropriate.

1. If a component(s) is deemed unsuitable-for-service or a sampled homogeneous group exceeds the criteria delineated in SP WEP 3.3.2, evaluate the deviations to determine the root cause per SP WEP 3.3.2 or SP WEP 3.3.5.

2. Establish the new group boundaries per SP WEP 3.3.2 or SP WEP 3.3.5.

3. Sample rebounded populations in accordance with SP WEP 3.1.6.

APPENDIX E

ADDING COMPONENTS TO GENERAL GROUPS
AND ESTABLISHING NEW SPECIAL GROUPS
AS A RESULT OF WEP ACQUIRED DATA

The Employee Concern/Quality Indicator Assessment (EC/QIA) group shall evaluate additional information acquired by WEP during performance of the project and add components to General Groups or establish additional Special Groups as appropriate in accordance with the following guidelines.

1. If in the course of the evaluation, components are identified which are within the WEP workscope but have not been included in the populations for General Plant Division, EC/QIA, with TVA concurrence, will extend the boundaries of existing General Groups to include the new components if the group affected will retain a homogeneous weld quality after addition of the new components.

2. Additional Special Groups must be established when WEP data indicates that additional component populations are present in which weld quality is not homogeneous with existing groups.