ATTACHMENT 4

BALDWIN ASSOCIATES	QUALITY ASSURANCE PROCEDURE MANUAL	REVISION 2
	BQA 196 Field Verification Evaluation Analysis	PAGE 1 OF 7

REVISION DATE	DESCRIPTION	APPROVAL	DATE
0	Original Release	Q.A. MANAGER G. Rodney by Phil	2/4/83
3-8-83		Q&TS MANAGER J E Fundis	2-4-83
1	REVISED & REWRITTEN	Q.A. MANAGER for G Rodney Rudy Tauco	3/31/83
4/11/83		Q&TS MANAGER J E Fundis	3-31-83
2	GENERAL REVISION (revised and rewritten)	Q.A. MANAGER C Rinderer	5/16/84
		Q&TS MANAGER G B Brandt	5/16/84
	DRAFT	Q.A. MANAGER	
		Q&TS MANAGER	
	INFORMATION ONLY	Q.A. MANAGER	
		Q&TS MANAGER	
		Q.A. MANAGER	
		Q&TS MANAGER	
		Q.A. MANAGER	
		Q&TS MANAGER	
		Q.A. MANAGER	
		Q&TS MANAGER	

FORM JV-835 (4/82)

1.0 PURPOSE

The purpose of this procedure is to establish the methods used to evaluate the results of the Baldwin Associates (BA) Field Verification Program.

2.0 SCOPE

This procedure applies to all installed safety related, augmented Class D, fire protection, and seismic HVAC systems, items, or components per Reference 3.1.

3.0 REFERENCES

3.1 BQA-190 "Field Verification"

3.2 BQA-191 "Field Verification Sampling Plan"

3.3 BQA-195 "Document Tracking"

3.4 BQA-197 "Feedback"

3.5 BAP-1.0 "Nonconformances"

3.6 BQA-194 "Field Verification of Turned-over systems"

4.0 DEFINITIONS

None

5.0 RESPONSIBILITIES

5.1 The Baldwin Associates Manager of Quality Assurance (MQA) is responsible for the implementation and overall administration of the Field Verification Program.

5.2 The Baldwin Associates Assistant Manager of Quality Assurance - Field Verification (AMQA) is responsible for:

a) Administration and coordination of the Field Verification Program.

b) Implementation of this procedure.

c) Preparation and issuance of monthly Field Verification Evaluation Reports.

5.3 The Baldwin Associates Senior Quality Assurance Engineer - Field Verification (SQAE) is responsible for:

a) Preparation of Evaluation Analysis Data Sheets (Exhibit #1).

b) Submittal of completed Evaluation Analysis Data Sheet for each checklist to the Management Information Systems Group (MIS).

c) Submittal of interim and/or final reports.

5.4 The BA Senior QA Engineer - MIS is responsible for:

a) Developing a computer program in support of the Field Verification Program.

b) Inputting data from the Evaluation Data Sheets.

c) Providing periodic print-outs for evaluation and status information.

6.0 GENERAL

6.1 This procedure describes the methods used to evaluate the results of the Field Verification Program. It identifies the method of data assembly, analysis, and the reporting of the results of the Field Verification Program.

6.2 All data contained on Field Verification Reports shall be coded as described below on the Evaluation Analysis Data Sheet (Exhibit #1).

6.2.1 The standardized coding for the evaluation will include the following:

a) Activity/Item

b) Building

c) Elevation

d) Safety Class

e) Discipline

f) Attribute Code

6.2.2 Activities/items will have a separate code number for each checklist within that activity. Activities/items will be coded as follows:

C1 Concrete Expansion Anchors
E1 Electrical Units
E2 Electrical Terminations
E3 Electrical Cables
H1 HVAC System (Duct & Support)

P1	Pipe Spool/Valves/Ins. Tubing
R1	Raceway Tray
R2	Raceway Supports
S1	Supplied Equipment
S2	Structural Members
R3	Conduit
P2	Component Supports
W1	Welding (ASME III)
W2	Welding (ANSI B31.1)
W3	Welding (AWS D1.1)
W4	Welding (AWS D1.3)

6.2.3 The following codes are used to identify the building:

RC	Reactor Containment Bldg.
TG	Turbine Generator Bldg.
DG	Diesel Generator Bldg.
FH	Fuel Handling Bldg.
AB	Auxiliary Bldg.
CG	Control Bldg.
SB	SCreen House Bldg.
RW	Radwaste Bldg.
XX	Other

6.2.4 Elevation shall be the floor level for the component.

6.2.5 The Sargent & Lundy Safety Class will be coded as follows:

a)	A	ASME III NB
b)	B	ASME III NC
c)	C	ASME III ND
d)	O	Other Safety Related
e)	D+	Augmented "D"
f)	FP	Fire Protection
g)	MC	Metal Containment
h)	IE	Electrical Class IE
i)	S	Safety

6.2.6 Discipline Codes - These codes are used to specify the primary discipline responsibility:

H - HVAC

M - Mechanical

E - Electrical

S - Structural

6.2.7 Coding of Attributes - Each attribute on each checklist will have a code designation. If the attribute is a critical attribute, it will be followed by a "C". If the attribute is non-critical, it will be followed by an "N". The code designation will be in accordance with the approved Field Verification Codification System maintained by the SQAE-MIS.

6.2.8 Disposition Codes - the following code numbers will be used to identify NCR discrepancy dispositions:

1 Rework

2 Repair

3 Use As Is

4 Reject/Replace

5 Invalid

6.2.9 Codes may be added or deleted from the above lists based upon the current needs of the Field Verification Program and approval of the Assistant Manager of Quality Assurance, Field Verification.

7.0 PROCEDURE

7.1 The Field Verification Inspector is responsible for performing Field Verification activities and documenting the results on the Field Verification Checklist. When complete he will forward the Checklist to the Field Verification Tech. Assistant.

7.1.1 Upon receipt of the Field Verification checklist, the Field Verification Tech. Assistant will complete the Evaluation Analysis Data Sheet (Exhibit 1) as follows:

a) Enter checklist number
b) Enter activities item code
c) Enter building code
d) Enter elevation code
e) Enter safety classification code
f) Enter discipline code
g) Enter unique attribute code
h) Enter number of items checked for each attribute
i) Enter number of attributes conforming
j) Checklist issue date

If any item has been rejected the following information will be entered:

k) Enter number of attributes non-conforming
l) Enter NCR number and/or punchlist number

7.2 Upon completion of the Evaluation Analysis Data Sheet, the Field Verification Tech. Assistant will initial and date the sheet ("Input/Date") and forward it, along with the original checklist, to the responsible SQAE or his designee.

7.3 The SQAE or designee will review the checklist and data sheet to ensure that all data has been completed accurately, initial and date the "Review/Date" space and return to the Field Verification Tech. Assistant.

7.4 The Field Verification Tech. Assistant will make copy(s) and forward the original data sheet to the Sr. QA Engineer-MIS. Copy(s) of the data sheet(s) and the original checklist(s) are then filed for future reference.

7.5 The SQAE-MIS will enter the data from the data sheet into the computer for evaluation and issue monthly printouts to the Assistant QA Manager - Field Verification.

7.6 The Assistant Manager of Quality Assurance - Field Verification shall prepare and issue the Field Verification Evaluation Report on a monthly basis. A copy shall be provided to the BAQA and IPQA Managers. This report will include, but will not necessarily be limited to, the following:

7.6.1 % Reject by Inspectable Attribute: All like inspectable attributes and a % comparison of items inspected versus items rejected.

7.6.2 % Reject by Building: All inspectable attributes by building and a % comparison of the number of items inspected versus the number of items rejected.

7.6.3 % Reject by TO Package: All inspectable attributes of a TO Package and a % comparison of the number of items inspected versus the number of items rejected.

7.6.4 % Reject by Activities/Items: All inspectable attributes by activities/items and a % comparison of the number of items inspected versus the number of items rejected.

NOTE: The above percent reject figures are provided for evaluation purposes only. All noted deficient items or conditions must be addressed.

7.7 Upon receipt of a dispositioned NCR, the Tech. Assistant Field Verification shall note the appropriate disposition on the Field Verification

Evaluation Analysis Data Sheet and forward a copy to the SQAE-MIS for computer input. The final disposition shall also be indicated on the Document Tracking Log Form.

7.8 If sampling has been used, a 95% confidence statement must be included that 5% or less (critical attributes) or 15% or less (non-critical attributes) of the identified conditions exist in the unexamined portion of the lot. This figure may not include any allowance for deficiency correction.

7.9 If sampling has been used and the number of inspectable attributes rejected reaches or exceeds the figures shown in Exhibits #2 or #3 the SQAE shall be notified that 100% verification will be required for that lot.

7.10 For completed lots, the BA-HQA shall submit a Field Verification Completion Report to the LP Manager of QA. The report shall include, but is not limited to, the following:

a) Identification of the lot inspected.

b) Traveler numbers (see Exhibit #3).

c) Component numbers.

d) Status of each inspectable element (i.e. inaccessible, open NCR, etc.)

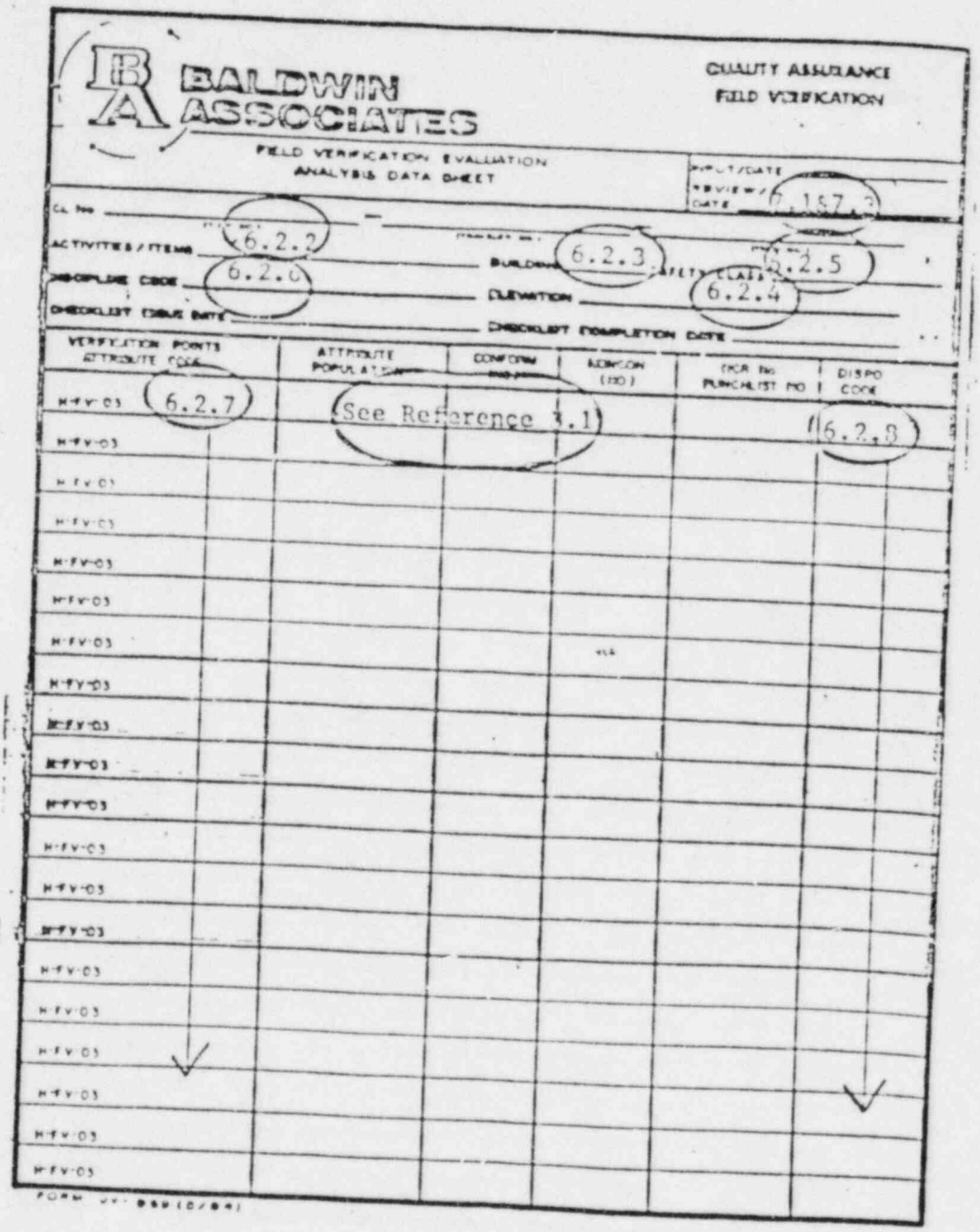
8.0 EXHIBITS

#1 Field Verification Evaluation Data Sheet (JV-969)

#2 Reject Numbers - Critical Attributes.

#3 Reject Numbers - Non-Critical Attributes.

EXHIBIT #1 (page 1 of 1)



BALDWIN ASSOCIATES

QUALITY ASSURANCE
FIELD VERIFICATION

FIELD VERIFICATION EVALUATION
ANALYSIS DATA SHEET

INPUT/DATE
REVIEW/DATE 6.1.87.3

CL No. —

ACTIVITIES / ITEMS 6.2.2

BUILDING 6.2.3

SAFETY CLASS 6.2.5

DISCIPLINE CODE 6.2.6

ELEVATION 6.2.4

CHECKLIST ISSUE DATE

CHECKLIST COMPLETION DATE

VERIFICATION POINTS ATTRIBUTE CODE	ATTRIBUTE POPULATION	CONFORM	NONCON (NO)	NCR No. PUNCHLIST NO	DISPO CODE
H-FV-03 6.2.7	See Reference 3.1				6.2.8
H-FV-03					
H-FV-03					
H-FV-03					
H-FV-03					
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FORM [illegible] BBA (8/84)

Denotes reference paragraph number

EXHIBIT #2 (page 1 of 1)

Reject Numbers - Critical Attributes

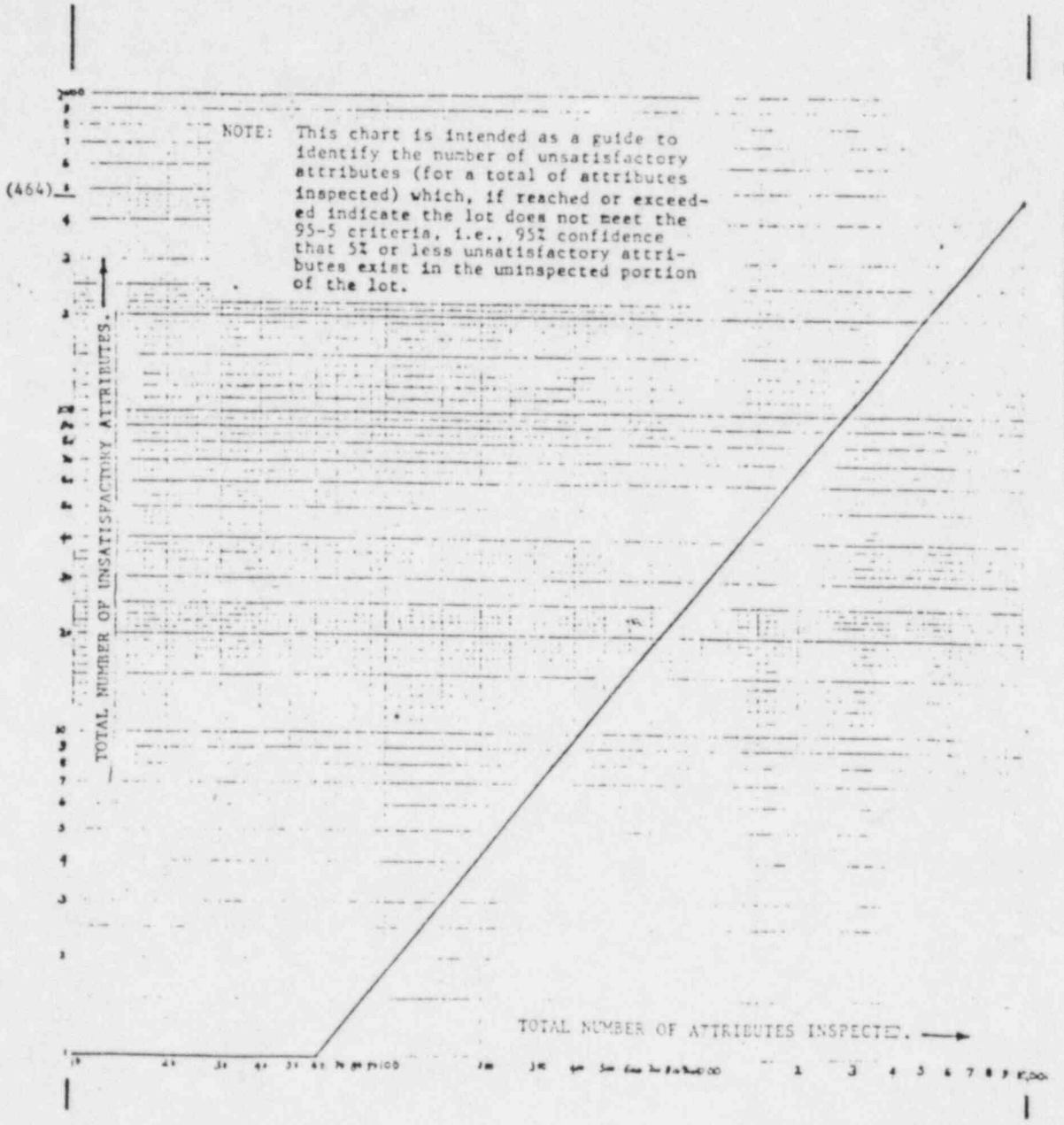
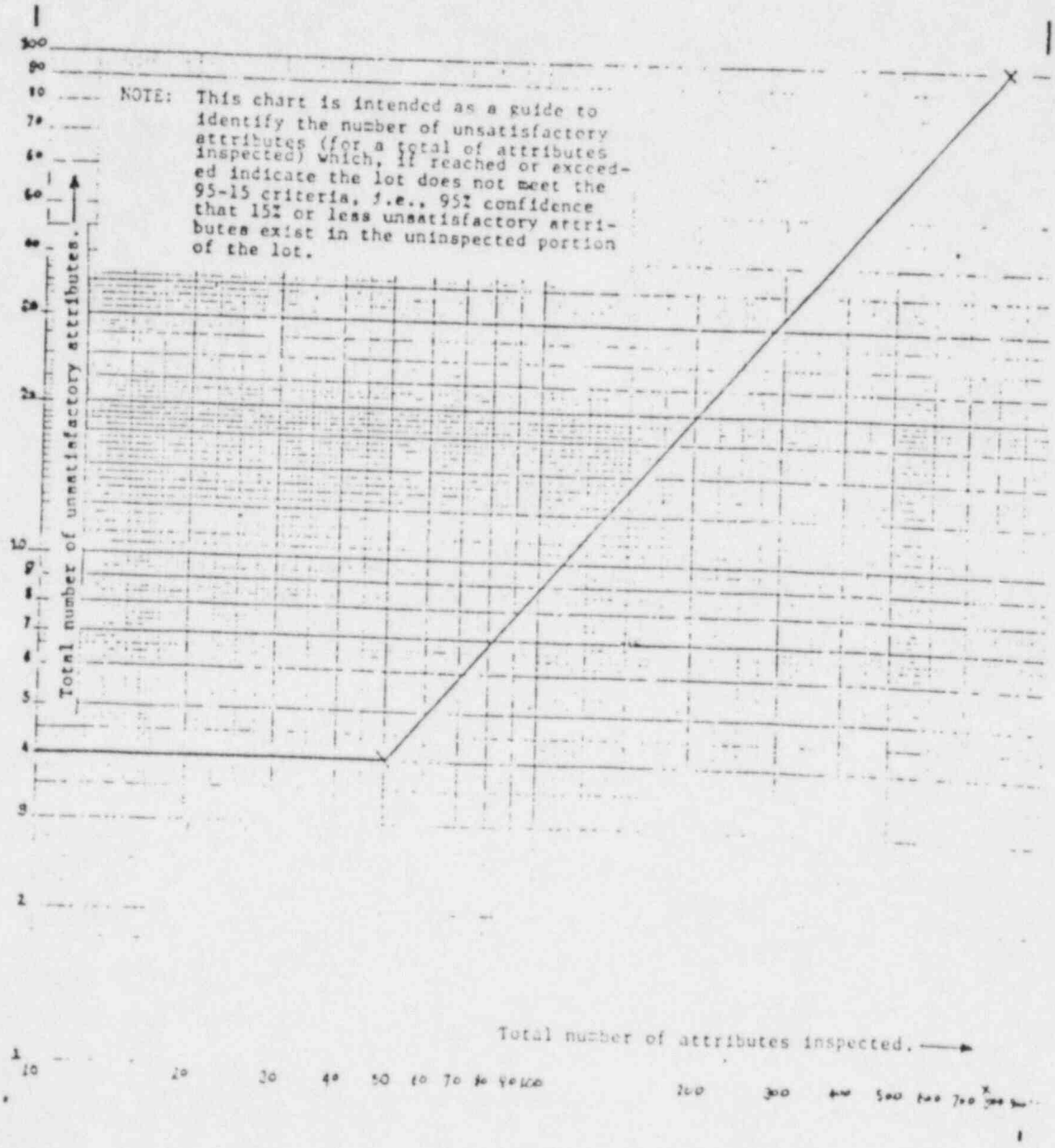


EXHIBIT #3 (pg. 1 of 1)

Reject Numbers - Noncritical Attributes



ATTACHMENT 5

STONE & WEBSTER ENGINEERING CORPORATION

245 SUMMER STREET, BOSTON, MASSACHUSETTS

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June 1, 1984

Mr. W. Connell
Quality Assurance Manager
Illinois Power Company
500 South 27th Street
Deacatur, IL 62521

Dear Mr. Connell:

Stone & Webster Engineering Corporation (SWEC) has reviewed the following Illinois Power Company (IPCo) and Baldwin Associates (BA) procedures in order to evaluate the impact the proposed revisions will have on the Overinspection (OI) and Field Verification (FV) Programs.

IPCo QAI-710.08, "Overinspection Sample Plan," Revision 3.
QAI-710.09, "Overinspection Evaluation Program," Revision 3.

BA BQA-191, "Field Verification Sample Plan," Revision 2.
BQA-196, "Field Verification Evaluation Analysis," Revision 2.

SWEC participated, along with IPCo and BA, in the preparation of the original and proposed revision to sampling plans used in support of the OI and FV Program.

Background

In 1983, BA and IPCo developed the FV and OI Programs, respectively, to provide sufficient assurance that safety related, augmented Class D, fire protection, and seismic HVAC systems, items or components, and the exposed structural steel in the auxiliary, fuel handling, containment, and control buildings at the Clinton Nuclear Power Station conform to established requirements.

The FV and OI programs operate in series, with BA's FV Program preceding the IPCo OI Program. IPCo has, in addition to product acceptability, a primary function of determining the correctness of prior BA inspection decisions.

Discussion

1. The original concept involved re-examination of a sufficient number of items (when sampling was used) to obtain 95 percent confidence that any discrepancies noted existed in no more than 5 percent of the unexamined

balance. This remains unchanged; both the current and proposed procedures require a sample size which assures compliance with this criteria.

2. In both programs, the commitment to address all noted nonconformances and deficient conditions also remains unchanged. However, clarification of their handling and significance when sampling is used has been addressed in the proposed procedures.

3. The current procedures involved acceptance based on the item count in the sample, a common practice in product inspection. However, actual experience has shown that sufficient item counts to allow sampling is often difficult or, in some cases, impossible to achieve. However, the concept of "critical" versus "non-critical" was based on attributes, not the items. Therefore, acceptance on an item basis and differentation of criticality as well as trend and root cause evaluation on an attribute basis became unnecessarily cumbersome.

4. In terms of a reverification effort, attributes provide a more accurate assessment of quality, since each attribute represents a workmanship, material, or documentation check, a discrete quality decision. Reexamination on this basis allows determination of acceptability of previous quality decisions and will permit appropriate trend and root cause evaluation.

5. In addition, since each checklist applied to an item contains a number of attributes, the evaluation will always be based on a larger number than the item count.

6. The proposed sampling plan and evaluation procedure utilize this approach and additionally clarify the interface between the BA and IPCo programs and set definition guidelines for the transfer of lots.

Summary

In our view the proposed procedures represent an enhancement to the quality reverification effort currently underway at the Clinton Nuclear Power Station. They fulfill all requirements previously agreed upon and additionally 1) benefit from actual experience, 2) improve the overall reverification process, 3) clarify the interface between the two programs, and 4) result in more definitive data in support of the trend and root cause evaluations.

The overall effect will be an improved, more sensitive measurement process with no loss in discrimination (the separating of satisfactory from deficient attributes).

R. G. Burns
Quality Assurance Manager

PFW/nrs