

ILLINOIS POWER COMPANY
RECOVERY PLAN

HVAC
Revision 1
May 3, 1983

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HVAC RECOVERY PLAN

Rev. 1

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Attachments:

1. HVAC Recovery Plan Matrix
2. HVAC Recovery Level II Schedule SWA 14,
15 and 20
3. Detailed Verification Plan
4. HVAC Recovery Level III Schedule SWA 14,
15 and 20
5. Prerequisites for requesting lifting
SWA 14, 15 and 20

INTRODUCTION

Stop Work Action 14, covering all safety related HVAC work was issued on June 23, 1982. The Stop Work Action was initiated because significant deficiencies were identified by the IP Verification Team and by Baldwin Associates Quality Assurance in the HVAC Quality Assurance Program and in documentation of inspections.

Stop Work Action 15, for all attachments of non-safety hangers to seismic building structures was issued on June 23, 1982. This Stop Work Action was initiated because there were inadequate quality assurance and quality control procedures for inspection and documentation of this work.

Stop Work 20, for all non-safety HVAC work in plant structures classified as seismic, Category I, was issued on Aug. 2, 1982. Stop Work 20 was issued because there were inadequate controls for construction and inspection of non-safety, seismically designed duct and hangers. The Stop Work was revised on October 25, 1982 to also include on-site fabrication and repair of non-safety, seismically designed duct work and components.

OUTLINE OF REVISIONS
TO THE HVAC RECOVERY PLAN

Revision 1 of the HVAC Recovery Plan is issued to update the plan that was submitted to the NRC on September 23, 1982. The significant changes to that plan are identified below:

1. A purpose and scope section has been added.
2. The implementation phase of the HVAC Recovery Plan (originally Phase II) is now divided into three separate phases (II, III and IV) to provide a more logical sequence of operations.
3. Attachment 3, the Detailed Verification Plan, has been rewritten to provide for changes in responsibilities for initial inspections, reinspections, and verifications of HVAC work. It also provides for the application of the IPC Overinspection Plan to HVAC work.
4. Logic diagrams defining the actions required for lifting the three respective Stop Works (14, 15 and 20) have been deleted. All actions for releasing the Stop Work Actions are now identified on the HVAC Recovery Plan Schedules, Attachments 2 and 4 and on Attachment 5, Prerequisites for lifting SWA 14, 15 and 20.
5. An itemized list of specific actions required prior to lifting the Stop Work Actions has been developed and is included as Attachment 5.

PURPOSE

The purpose of the HVAC Recovery Plan is to investigate, evaluate and resolve identified problems which caused the Stop Work Actions 14, 15 and 20 to be issued and to establish methods and systems to assure that all previously installed HVAC work conforms to all design requirements.

The Plan provides a phased system of investigation, definition of corrective actions, development of schedules, and implementation of plans in a sequenced order leading to a full release of the Stop Work Actions.

SCOPE

The scope of the HVAC Recovery Plan includes the site receipt, installation, inspection and turnover of all Safety Related and seismically designed HVAC systems and components. The scope also includes material procurement, fabrication and shipment of HVAC material, prefabricated components, and sub-tier vendor supplied items.

HVAC RECOVERY PLAN

Outline

- Phase I: Investigation, evaluation and Corrective Action
Stop Work Actions 14, 15, and 20.
- A. Review Identified Problems.
 - B. Develop Corrective Action Plans and Schedules.
 - C. Develop plans to assure previously accepted work meets regulatory requirements.
- Phase II: Implementation of Plans to release Stop Work Actions 14, 15 and 20.
- A. Develop schedules for implementing plans.
 - B. Review and approve responses to corrective action plans.
 - C. S & L to issue new hanger drawings.
- Phase III: Partial release Stop Work Actions for inspection
- A. Release Stop Works for Zack inspection.
 - B. Release for BA Verification Inspections.
 - C. Perform BAQA and IPQA audits and surveillances.
- Phase IV: Incremental release of Stop Work Actions
- A. Release Stop Works for rework and/or new work.
 - B. Perform BAQA and IPQA Audits and Surveillances
- Phase V: Overview of HVAC
- A. Identify and tabulate problems identified subsequent to Stop Work Actions.
 - B. Review/develop corrective action plans.
 - C. Monitor and manage progress of resolutions.

Phase I

- A. The problems and concerns which were identified in various special investigations, audits and reports were reviewed.

The information reviewed included:

- IPC Verification Team Audit Report
- BAQA Special Audit of Zack
- IPC Quality Assurance Surveillance Reports
- IPC 10CFR 50.55(e) Reports
- Zack Co. Potential 10FCR Part 21

The respective problems and concerns were tabulated on the HVAC Recovery Matrix, included as Attachment 1.

- B. The corrective action for each problem and area of concern was determined and is identified on the HVAC Matrix. The status of the corrective actions was periodically updated on the Matrix and will be maintained until all items are fully closed.

A level II HVAC Recovery Schedule has been prepared showing principle activities leading to a release of the Stop Work Actions for inspection and new work and is included as Attachment 2 .

- C. Illinois Power, Baldwin Associates, and The Zack Co. have developed plans to assure that all work installed prior to the Stop Work will meet all specification and regulatory requirements. This plan requires The Zack Co. to review existing inspection documentation, to review the qualifications of past inspectors and to identify work which will require reinspection. Additionally, following the reinspection of existing work by Zack, both documentation and work will be subject to verification by B.A. Quality Assurance, and overinspection by I.P.C. The B.A.

Phase I - C. (Cont.)

Verification and I.P.C. Overinspection will be performed in accordance with the approved IPC Overinspection Plan and associated approved procedures and checklists.

The I.P.C. Overinspection Plan, phases II and III will be modified in their application to HVAC work by initially expanding the amount of verification by B.A. Q.A. to 100% of completed work and to a minimum of 20% overinspection by IPQA. These amounts of verification and overinspection will continue until a sufficient level of confidence is gained in the acceptability of the work to allow a sampling plan to be implemented for BA Verification and IPC Overinspection.

Attachment 3 provides additional details for the HVAC verification and overinspection of documentation and completed work.

Phase II

- A. A comprehensive Level III Schedule and Logic Diagram has been developed to show interactions, responsibilities, prerequisites and restraints of activities leading to release of Stop Work Actions 14, 15 and 20. The latest issue of the Level III HVAC Recovery Schedule is provided as Attachment 4. This schedule has been highlighted to show current progress for each activity.

From the typical logic diagrams shown in the boxed in areas of the Level III Schedule, detailed, Level IV Schedules will be drawn for reinspection of respective areas/elevations. These schedules will be used to identify reinspection scope, manpower requirements, and scheduled durations.

- B. The Zack Quality Assurance and Construction Program was completely revised and resubmitted to Baldwin Associates and Sargent and Lundy for review and approval. A Clinton, site unique Quality Assurance Manual has been developed. The Manual is tailored to the Clinton HVAC project specification and site Zack construction and quality practices.

All Zack Field Construction Procedures (FCP) and Field Quality Control Procedures (FQCP) have been rewritten to address the concerns and problems raised prior to the Stop Work Actions. Additional procedures and departmental instructions have also been written to better define activities affecting quality.

BA Quality Assurance has reviewed and has conditionally approved the revised Zack Quality Assurance Manual.

Phase II - B. (Cont.)

Final approval will be granted upon approval of all implementing procedures referenced therein. IP Quality Assurance has also reviewed the Zack Quality Assurance Manual. B.A. Quality Assurance, and Sargent and Lundy, as applicable, have reviewed and will approve all Zack construction and quality procedures and have reviewed Zack Departmental Instructions.

- C. Sargent and Lundy has been directed by Illinois Power to issue individual HVAC duct hanger drawings, in place of the previous hanger schedules and special details. All inspections, reinspections and future work will utilize these new hanger drawings. Schedules have been prepared showing priorities for hanger drawing releases from Sargent and Lundy.

Phase III

- A. When the prerequisites listed in Attachment 5 are complete, a request for an exception to the Stop Work will be issued for inspection of specific areas/elevations. Zack QC will reinspect specific Safety Related work which has been identified from their review of documentation. In addition, all Non-Safety Seismic Work will be inspected. Level IV Inspection Schedules will be used to identify and monitor the inspection/reinspection activities.
- B. Following approval of the BA and IPC Verification/Over-inspection procedures and checklists, and acceptance of the work by Zack and BA Quality Assurance; the work will be subjected to BA Verification inspections and IPC Over-inspection.
- C. During this phase of the Plan, BAQA and IPQA will audit and perform surveillances of the Zack Reinspection work.

Phase IV

- A. Following a review of the reinspection results by BAQA, the BA HVAC Manager and IP, and with NRC concurrence, a determination will be made to allow Zack to proceed with rework (if required) or initiation of new work, or both, on an area/elevation. The review will determine the scope of rework in a given area, the manpower required to resolve the deficiencies identified, and will evaluate the types of deficiencies as they would relate to the Zack program for new work. Zack has prepared procedures and established a work control function. The purpose of the function is to assure timely inspection, by QC, of completed work and to limit issuance of rework or new work packages to a level consistent with QC resources.
- B. During the rework/new work phase of each area, BAQA and IPQA will perform audits and surveillances of the implementation of the revised Zack QA program and procedures. BAQA has prepared Audit and Surveillance Plans for the reinspection and rework phases of the HVAC Recovery Plan.

Phase V

A. During the implementation of Phases I and II of the HVAC Recovery Plan other sources of information became available for further review. These sources included:

1. A potential 10 CFR 21 report on shop welder certification filed by The Zack Company.
2. GAP allegations identified at Commonwealth Edison's LaSalle Station.
3. Zack Corrective Action Request No. 30 on Welding Procedures used for Clinton and Midland.
4. The INPO Construction Audit of IPC and BA at Clinton.
5. Stone and Webster Engineering Evaluation of the Clinton Project.
6. NRC Region III and IV inspections performed at The Zack Company. Reports 99900785/82-01, 50-373/82-51 (DETP) and 50-374/02-18 (DETP).
7. Zack responses to NRC investigations and non-conformances in Report 99900785/82-01.

Each of these sources were reviewed to determine if additional corrective action plans were required.

The concerns not previously identified on the HVAC Matrix have been added along with the corrective actions being taken or planned.

Phase V - (Cont.)

B. To completely resolve the technical concerns identified in the HVAC Matrix, Sargent and Lundy is developing a Technical Evaluation Program of Zack installed HVAC Systems. Areas to be addressed in the Technical Evaluation Program include:

- . Material certification
- . Disposition of Zack Non-conformance Reports
Shop and Field
- . Weld Procedure qualification
- . Welder Certification Shop and Field
- . Installed location of Duct, Accessories,
Equipment

This program is scheduled for full implementation approximately June 1st and will conclude approximately September 1st.

C. During the course of all phases of the HVAC Recovery Plan, corrective action plans and schedules will be monitored and statused. Administrative and Management controls will be utilized to accomplish timely and adequate resolution of problems and concerns. Continual evaluations of manpower resources will be made and incorporated onto schedules to support all phases of the HVAC Recovery Plan.

HVAC RECOVERY PLAN
KEY TO REFERENCE NUMBER

BQ - BA QA Audits (as indicated)

IPQ - IP QA Surveillance

VT - Verification Team Findings, Verification Team Matrix

NRC - NRC Finding (as indicated)

WEA-1-83 - W. B. Anderson Letter Dated 4/7/83 addressing Quality Concerns
with Zack Company

CF - L. Gelbart Final Report on BAQA Audit

RECOVERY PLAN(S) - HVAC

PAGE 1
REV 1 5-4-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
1	VT-50 VT-53 VT-55 VT-60 VT-102 GF-1q GF-2h GF-3n VT-51 VT-69 VT-98 VT-187 GF-3i GF-3j IPC Surv. Y 11976	1) Documentation of previous Zack work was found to be inadequate. 2) Documentation of Control Room system turnover (VC-1) had discrepancies	1 a) Develop program and procedures to verify acceptability of old, in process and new work. 2 a) Potential 10 CFR 50.55(e) and Zack CAR written on Control Room documentation 2 b) VC-1 Documentation to be reviewed and corrected by Zack and reverified by BAQA 2 c) BA, Zack & IPC to develop a schedule and mechanism for documentation T/O	1 a) Reinspection Scope to be submitted by Zack See HVAC Recovery Plan 1 b) See HVAC Recovery Plan Attachment 3 1 c) Manloaded inspection schedule to be drawn up. Preliminary Issued 2 a) Zack CAR-022 5/24/82 Potential 10 CFR 50.55(e) 82-05 2 b) VC-1 Documentation Package returned to Zack via DEK H-46 2 c) Included as a part of overall Zack/BA Reinspection Plan. FOCP - 21 BQA - 172	A4/11/83 A/4/25/83 E5/6/83 A/4/20/83 A2/22/83	2 a) See Item 12 2 c) See Zack Procedure status Matrix

1 KEY

BO - BA QA AUDIT
TOO - TO QA SURVEILLANCE

VT - VERIFICATION
NDC - NDC ITEM

BAPS - PRA

ATTACHMENT 1

RECOVERY PLAN(S) - HVAC

PAGE 2
REV 2 2-28-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
2	GF-1a GF-3a VT-63 VT-69 VT-108	1) Zack QA Manual was not specifically written for CPS and does not meet all requirements of K-2910 2) Zack QA Manual does not provide adequate detail describing implementation of various programs.	Revise QA Manual Revise QA Manual	In Zack Management Review Submitted to BA 8/12 Resubmitted to BA BA, IP and S&L to review Comments Returned to Zack 2/16 Zack resubmitted 3QA conditionally approved (WCA 3803). Awaiting approval of Zack Procedures.	A7/16/82 A8/12/82 A2/7/83 A2/16/83 A2/22/83 A2/28/83 E5/9/83	

BA'S - PRA

VT - VERIFICATION

GF-12QA Collect Audit

BA - QA AUDIT

1 KEY

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REV 3 5-4-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
3	VT-69 VT-56 VT-57 VT-58 VT-61 VT-62 VT-63 VT-96 VT-97 VT-103 VT-104 VT-105 VT-106 VT-107 VT-111 GF-1b GF-1c GF-3b GF-3g IPQA Survey 11976 NRC-1E 81-26-06	Zack Company procedures do not consistently reflect actual installation and inspection activities.	A Prepare a list of procedures applicable to CPS. B Prepare a review matrix of procedures. C Revise procedures. D Train personnel to new procedures.	A Complete B Complete C In process. Procedures were submitted. Being reviewed and commented on by BA, IP and S&L. Meetings to discuss these comments are scheduled for week of 2/14. See Zack Procedure Statusing Matrix D. Training Started Anticipated complete	 A 11/2/82 A 2/14/83 A 4/11/83 E 5/25/83	 D. Completion awaiting approval of procedures FUCP-21 FUCP-25 FCP-4 FCP-19 QAI-28 FCP-9

1 KEY

BQ - BA QA AUDIT
 IPQ - IP QA SURVEILLANCE

VT - VERIFICATION
 NRC - NRC ITEM

GF - BAQA Gelbert Audit

BAPS - PRA

RECOVERY PLAN(S) - HVAC

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REV 2 2/90/111

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
4	VI-48 VI-49 VI-50 VI-174 thru VI-186	Audit teams found hardware design deviations.	Zack to reinspect all items identified in Verification Team Report and take appropriate corrective action.	1) Zack requested via GWM-030-02 that reinspection be allowed during SMO 14. 2) Reinspection and Doc. of results complete. Final disposition pending release of SMO 14, 15 & 20 for reinspection. Verification Team item 178, 179, 180, 182, 183 closed by Verification Team.		See Verification Team Recovery Plan Early start 4-1-83

BAPS - FRA

VT - VERIFICATION
BRC - BRC ITEM

BQ - BA QA AUDIT
IPQ - IP QA SURVEILLANCE

1 KEY

RECOVERY PLAN(S) - HVAC

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REV 2 2/28/84

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. CMT'L. DATE	COMMENTS
5	VT-54 GF-1e GF-3d	1) Identifying hardware configurations from S&L design drawings are too complex for proper installation.	1a) Develop a Work Package system to assure items are installed to latest design/change documents and procedures.	1a) Zack procedure FCP-5 requires installation/inspection Work Package. See Zack Procedure statusing Matrix Accepted	A10/21/82 A3/30/83	1a) Zack submitted to S&L 11/1/82. S&L commented and returned 12/7/82 Zack to resubmit
			1b) S&L to provide individual hanger drawings.	1b) See S&L hanger release schedule graph.	7/16/83	1b) S&L is providing individual hanger drawings. 828 Rec'd. See Drawg. Rel. Sched
	VT-110	2) S&L hanger schedule does not reflect safety classification.	2) Classification will be shown on new S&L hanger drawings.	2) See S&L hanger release schedule graph.		

1 KEY

BQ - EA Q&S AUDIT
TRQ - TR QA SURVEILLANCE

VT - VERIFICATION
NRC - NRC ITEM

GF - BAQA Gilbert Audit

EAPS - FRA

RECOVERY PLAN(S) - HVAC

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REV 3 5-4-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
6	GF-B1 NRC IE 80-16-06 IPQ Surv. Y 11976 4/1/82	Inadequate documentation of inspections on Zack N/S seismic work.	A) Develop an inspection procedure. B) Decision by IPC to treat non-safety/Seismic as "safety related" to avoid duplication of programs. C) Zack QC to inspect all non-safety/seismic work	A) Zack is currently writing and rewriting procedures to cover all aspects of non-safety/seismic work. B) S&L prepared EON 3365 to include non-safety/seismic into the Quality Assurance Program. C) Inspection scope/schedule to be developed Preliminary Issued	A2/14/83 A2/14/83 E5/6/83 A4/20/83	See Procedure status Matrix

KEY

BQ - BQ QA AUDIT
IPQ - IP QA SURVEILLANCE

VI - VERIFICATION
NRC - NRC ITEM

GF-BW/A Gilbert Audit

EAPS - FRA

RECOVERY PLAN(S) - HVAC

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REV 3 5-4-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
7	GF-2a GF-3k	Zack did not have a program for surveillance of storage and housekeeping	Zack to develop a program	Zack has prepared a storage and housekeeping procedure FCP-2 and a QA surveillance procedure QAI-10 - submitted BA/S&L/ IP to approve or provide comments See Procedure Status Matrix FCP-2 Accepted QAI-10 Accepted	A 11/2/82 A1/26/83 A2/16/83 A3/29/83 A3/30/83	

BAPS - PRA

1 KEY
BQ - BA QA AUDIT
VT - VERIFICATION
CF - CFWA Collect Audit

RECOVERY PLAN(S) - HVAC

PAF. H
REV 3 5-4-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
8	CF-1f CF-3e	There is inadequate criteria for inspection and acceptance of bolting installations	<p>A) S&I. to provide criteria</p> <p>B) Zack to develop a procedure</p> <p>C) Reinspection plan to be developed for selected connections</p>	<p>A) S&I. issued B31-3122</p> <p>B) RUCP-14 Submitted</p> <p>C) Approved Zack to submit reinspection procedure for completed bolted connections</p>	<p>A7/26/82</p> <p>A11/1/82 A3/30/83 E5/13/83</p>	

BAPS - PRA

CF-100,000 (2) Direct Audit

VT - VERIFICATION

BO - BA QA AUDIT

1 KEY

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REV 2 2/28/83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
9	CF-2g GF-3f	There is no centralized point for distribution (to Zack) of design drawings and change documents	BA to develop a procedure/ instruction to cover its handling of design drawings and change documents for Zack	BA Document Control now transmits all Engineering documents to Zack directly	8/15/82	

1 KEY

BQ - BA QA AUDIT
IDQ - ID QA SURVEILLANCE

VT - VERIFICATION
MRC - MRC 1334

GF-BQA Gilbert Audit

BAPS - PRA

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REV 3 5-4-83

ITEM NO.	REF. NO.	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPLETION DATE	COMMENTS
10	VF-52 VT-100	1) There is not sufficient surveillance of Zack's hardware installation. 2) There is not enough BAQA manpower to devote to Zack surveillance.	1a) BA & IP QA to increase surveillance of hardware installation. 1b) BAQA to develop surveillance, audit and inspection point schedules. 2) BA QA to increase manpower for vendor surveillance.	1a) IPQA began increased surveillance of Zack in Nov., 1982. 1b) BA submitted: BAQA Audit Plan-Reinsp. BAQA Surveillance Plan-Reinsp. BAQA Inspection Point Checklist for shop-shipping releases. BAQA Site Surveillance Audit schedule and surveillance check plan submitted 2) BA increased to 3 full time from 1 full time Vendor Surveillance Engineers.	A 11/82 A10/21/82 A10/21/82 A1/4/83 A3/25/83 A10/1/82	Superseded by 1/25 Submittal

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REV 2 2/26/83

ITEM NO.	REF. NO.	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPLETION DATE	COMMENTS
11	VT-64 VT-109	1) FSAR paragraph 7.1.2.1.45 on Fuel Building IN/BC System Control & Instrumentation requires Fuel Building isolation dampers and duct between them, to be safety related. This is contrary to, Table 3.2-1 of FSAR and paragraph 113 of K-2910.	1a) NSED to revise table 3.2-1 of FSAR. 1b) S&L to revise para. 113 of K-2910.	1a) FSAR has been revised in Amend. 18 1b) ECN 3143 was written to revise 113	A9/82 A8/11/82	1) Closed
	VT-65	2) FSAR does not specify fabrication and inspection requirements for safety/seismic duct and supports.	2) NSED to review/revise FSAR to include requirements for fab. and insp. if required.	2) NSED provided a response to Verification Team 7/23. FSAR is not required to present this level of detail. It is covered in K-space K-2910.	A7/23/82	2) Closed

BAPS - PRA

VT - VERIFICATION
NRC - NRC ITEM

BQ - BQ QA ADJCT
TRO - TRO QA SURVEILLANCE

1 KEY

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REV 2 2/28/83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPLETION DATE	COMMENTS
12	82-05 50.55(e)	Questionable Quality documentation and records for safety-related HVAC system installed by Zack Notification: Y13594 6/21/82	Investigation and reporting assigned to R. J. Canfield and W. M. Berry Stop Work 14, 15, 20 Totally Revise QA Program Transfer responsibility for corrective action to HVAC Recovery Program.	Interim Report Drafted 10/8-31 Reinspection and re-documentation to be performed as described in HVAC Reinspection Plan. "Breakdown in QA Program 10CFR 50-55e 82-05 Final Report to NRC QAM and procedures revised Resubmitted BA/IP/S&L Review/Approve	7/14/82 10/21/82 11/2/82 5/9/83	See item 2 & 3 HVAC Recovery Matrix

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PNR 11
REV 2 2/20/81

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
13	NRC 81-25-06	Resident NRC inspector requests demonstration that HVAC duct and hots above 828 attached to containment will not fall onto fuel pools during a seismic event.	A) Engineering design response - Skl. B) Construction response - Zack	A) SIMI 7138 B) Zack response received and evaluation by INWA determined that response was inadequate. Review of documentation and reinspection is described in INWA Reinspection Plan Transferred Non-Safety Seismic to "Quality Program Scope" by ELN 3365	02/14/81	See INWA Schedule

BAPS - PRA

VT - VERIFICATION
NRC - PREP. ITEM

BO - BA QA AUDIT
TWO - TO QA CIRCUMSTANT

1 KEY

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REV 2 2/28/83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. CTCL. DATE	COMMENTS
14	81-04 50.55(e)	Possible inconsistencies in material certifications for Zack supplied duct and hangers. Notification: L-14 (10-02)	Investigation and reporting assigned to IP P.M. - Compliance (R. Folck)	Interim Reports L14-81 (11-04)-L, U-0325 L14-82 (02-03)-L, U-0413 L14-82 (05-03)-L, U-0474 U-0524 U-10007 U-10026 53-identified discrepancies 32 use as is NCR's have been accepted by S&L BA prepared NCR's to cover the Zack NCR's 8231 8232 8212 8444 8548 8668 HQA has performed surveillances on adequacies of actions taken by Zack. Some deficiencies were found and reported. Zack to respond by 9/15/82. (see R. Folck - Report Y-12169 Refer to 10CFR 50.55(e) 81-04 NCR status Matrix	A 11/4/81 A 2/3/82 A 5/3/82 A 8/3/82 A 11/3/82 A 2/3/83 A 9/10/82 A 8/82	Zack NCR's submitted being evaluated by IP/BA and S&L. Being tracked by HQ Corrective Action Program

1 KEY

BO - BA QA AUDIT
IP - IP QA SURVEILLANCE

VT - VERIFICATION
NCR - NCR ITEM

BAPS - FR

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PAGE 15
REV 2 4/10/83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPLETION DATE	COMMENTS
15	10CFR21	Questionable welding records at Zack Fabrication Facility.	1) Zack to do investigation and provide reports. 2) IPC QA to perform surveillance of Zack's investigation and verify final disposition.	1a) Zack notification to NRC by letter of potential Part 21. 1b) Zack withdraws Part 21 via letter to NRC. 1c) Zack provided report to BA via letter to W. J. Harrington. 2a) IPQA assigned responsibility for evaluation of Part 21 via AJB memo Y-13671. 2b) IPQA evaluation/verification surveillance of Zack actions (Zack notification by RMF011-82). 2c) IPQA Surveillance Report Y-14200, two open items C-82-069, C-82-070. 2d) Report to IPQA RMF-036. 2e) Report to IPQA RMF-040. 2f) BAQA surveillance of Zack shop travelers and responses to ARR-780, 781 BAQA Mjr. Final Report	08/2/82 09/14/82 09/27/82 08/13/82 010/21/82 011/12/82 012/1/82 01/28/83 01/18-21/83 05/1/83	

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REV 2 2/28/81

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
16	NRC 80-16-05	1) 38 safety related hangers on 800 Control were installed in disagreement with NCR 3030 disposition Q37-80 (08-28)-0, NRC letter dated 8/28/80	1a) Complete reinspection of HVAC hangers with similar attachment details was conducted 1b) CAR #56 was written and a document control procedure was changed and implemented	1a) NCR 3515 was written on 8/6/80 1b) BA external audit E-265A Documents and tracks follow-up	8/6/80	1) IP answered NRC item on 0-0185 Q37-80 (09-19) Resident NRC Inspector indicated he will not close this item until resolution of Zack Quality concerns (SWO #014 & #015)
	80-16-06	2) Zack incorrectly verified the faulty inspection of S.R. HVAC hangers on 800 Control Inspection records of subject HVAC hangers do not reflect ongoing/completed work installations	2a) Redoctrination of all Zack QC Personnel on inspection criteria 2b) Design changes are formally transmitted to the Zack QC to be placed on reading board	2) Corrective action has been completed.		2) Resident NRC inspector indicates he will not close this item until resolution of Zack Quality concerns (SWO #014 & #015)

RECOVERY PLAN(S) - HVAC

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REV 2 2/20/83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
17	L16-81 10CFR21	Improper fan casings on Buffalo Forge Fans. Would not adequately contain missiles. 6/26/81	A Investigation and response by NGED - J. D. Geier and P. E. Walberg and Buffalo Forge. B Rework of fans to be done at Clinton site per Buffalo Engineering drawings	A Report L14-81, 10-22-81 - Y7146 Supplement L14-81-12-08-81 - Y-7308 Final Report 1606-L, U-0479 B BA to perform work. IPQA has a notification point plan in effect for surveillance 8/25/82 Pending BA Construction re-work Material Receipt due 12/1/82 Waiting work assignment Estimated completion May, 1983	A 10/22/81 A 12/1/82 A 12/1/82	IPQA Notification Point (Y-12090)

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
18	WBA-1-83	1. Zack Organization Deficiencies	1 a) Fill Project Manager Vacancy.	1 a) Vacancy Filled	A2/1/83	
			1 b) Fill QC Manager Vacancy	1 b) Vacancy Filled	A4/11/83	
			1 c) Hire new Assistant Project Manager (Welding & Special Projects)	1 c) Vacancy Filled	A3/24/83	
		2. Communication lines between BA and Zack inadequately defined.	2. Establish Administrative Directives to use BA HVAC as contract communication interface.	2. Letter DEK-H-4-83 Letter DEK-H-90-83	A1/25/83 A3/24/83	

1 KEY

BO - BA QA AUDIT
HRC - HRC SURVEILLANCE

VT - VERIFICATION
HRC - HRC 17334

BAPS - PRA

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. Cmpl. DATE	COMMENTS
19	WBA-1-83	1. BA organization vacancies 2. Inadequate contract Administration Procedures	1. Fill BA HVAC Manager Vacancy 2. Develop Subcontract Project Management Guides and Procedures	1. Vacancy filled by D. E. Korneman 2. BA Management and Departmental Guides prepared - Subcontract Change Control Sub-402 - Subcontract Close-out Sub-401 - Reimbursable Criteria - Subcontract Administration	A1/17/83 A4/20/83 A4/22/83 A4/19/83 E6/17/83	

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
20	WBA-1-83	Zack receipt of foreign origin material without proper control and compliance with specification	a) Zack prepared NCR 519 R/1 BA prepared NCR 6528 b) As part of 50.55(e) 81-04 Zack revised their corporate Receipt Inspection Procedure and will retrain their personnel	a) NCR's closed S&I. accepted use-as-is recommendation b) Zack corporate Procedure PQCP-1 Rev. 3 is approved Zack personnel were trained in this procedure	A4/16/82 A12/2/81 A4/23/82	

1 KEY

BO - BA QA AUDIT
INV - IP QA SURVEILLANCE

VT - VERIFICATION
NRC - NRC ITEM

BAPS - PRA

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
21	WHA-1-83	Improper use of Zack Field Interference Notices (FIN)	a) Revise Procedures b) Review all existing FINS and document discrepancies on NCR's	a) PUP-23 was revised by Zack approved by S&L 4/19/83 b) Zack QA to review. BAQA and IQA to perform random surveillance.	A4/19/83 60/1/83	

BAPS - PRA

VT - VERIFICATION
BRC - BRC 11111

BQ - BA QA AUDIT
HQA - HQ QA SURVEILLANCE

1 KEY

RECOVERY PLAN(S) - HVAC

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REV D 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
22	WVA-1-83 & NRC	Incomplete information provided on fabrication documents.	<p>a) Field work Provide improved controls and procedures for field fabrication</p> <p>b) Shop Work - Revise QAM - Revise Procedures</p> <p>c) S&L to include fabricated hardware in Technical Evaluation</p>	<p>a) Zack revised and prepared procedures and instructions FCP-5 Site Fab & install DI- 3 Initiation of Job Plan DI- 4 Prep. of fab tickets</p> <p>b) QAM to be resubmitted Procedures to be resubmitted</p> <p>c) S&L submitted program description</p>	<p>13/30/83</p> <p>05/20/83</p> <p>04/19/83</p>	Approved WVA

BAPS - PRA

VT - VERIFICATION
REC - REC TRIM

BO - BA QA AUDIT
TMA - TMA COMPLIANCE

1 KEY

RECOVERY PLAN(S) - HVAC

PAGE 21

REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
23	IPC-C 82-069	1. Improperly certified Welders in Cicero shop	1 a) Zack review fabrication documentation and note discrepancies	1 a) Zack prepared NCR 421	2/10/22/82	1 a) BA to prepare NCR
	IPC-C 82-070			1 b) BAQA performed evaluation documented on response to ARR 760, 781	E5/1/83	
				1 c) S&L will include in technical evaluation plan	E8/83	
	Zack CAR-30	2. Incorrect welding procedure specification qualification	2 a) Nuclear Safety Related Work in shop halted	2 a) Zack supplied Clinton Corrective Action plan via letter DHBA-1188	A4/1/83	
			2 b) Zack to validate old procedures and provide plan for resolving to BA	2 b) Program plan submitted	A4/20/83	
			2 c) S&L to perform technical evaluation			
		3. Unqualified testing Laboratory (Photon)	3. Zack to use only qualified suppliers for testing services.	3 a) Photon removed from AVI. Pittsburgh testing to be used tensile testing	A12/14/83	

1 KEY

BO - BA QA AUDIT
TDO - TDO QA SUPERVISANCE

VI - VERIFICATION
MPC - MPC ITEM

BAPS - PRA

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
24	NRC 50-373/ 82-51 50-374/ 82-18	1. Inadequate corrective action system at Ceco, LaSalle	1 a) Develop and implement improved corrective action program	1 a) BA revised BQA 162	A3/22/83	
			1 b) Zack to include corrective action trending into site procedure	1 b) Zack QAM and procedures FQCP-8 non-conformance and QAI-10 QA Surveillance indicate trending to be done on a monthly basis by Zack in Cicero	A1/10/83	
				1 c) Cicero QAM to be revised and resubmitted	E5/20/83	
	IPC-C-82-064	2. Zack non-conformances improperly closed	2 a) Review all Cicero Shop closed non-conformances relating to Material Certifications and submit to S&L via BA NCR's	2 a) See 50.55(e) 81-04		
			2 b) Review all Cicero Shop NCR's relating to fabrication and Vendor supplied items	2 b) S&L to include in Technical Evaluation	E8/15/83	
			2 c) Review all Zack site generated NCR's for which no BA NCR was written	2 c) S&L to include in Technical Evaluation	E8/83	
			2 d) Zack revised FQCP-8 non-conformances	2 d) FQCP-8 accepted	A3/30/83	
			2 e) Zack to train Cicero personnel on NCR Procedure	2 e) Zack Ast. QAM Letter Commitment to training (R. J. Basiaga to G. Roshy)	A3/9/83	

1 KEY

BQ - BA QA AUDIT
IPC - IPC QA SURVEILLANCE

VT - VERIFICATION
NRC - NRC ITEM

BAPS - PRA

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
25	NRC Region IV Report 99900785/ 82-01	Inadequate Weld Filler Metal Control	<ol style="list-style-type: none"> Revise and resubmit Shop Procedure PSCP-6 S&L to include a review for technical adequacy of welds performed under conditions noted. 	<ol style="list-style-type: none"> Submitted to BA and S&L <ol style="list-style-type: none"> Shop work halted per Zack CAR-30 Shop QA Manual returned Conditional Accept S&L Technical Evaluation Program description submitted to IPC 	A11-5-82 A12-6-82 A4-11-83 A4-19-83	Approval pending Shop QA Manual Review and approval

1 KEY

BO - BA QA AUDIT
1111 - 1111 1111 1111 1111

VT - VERIFICATION
NRC - NRC 1111

BAPS - PRA

RECOVERY PLAN(S) - HVAC

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REV D 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
26	NIC Region IV Report 99900785/ 82-01	Inadequate information on Fabrication Travelers	Revise and resubmit for approval, Shop Fabrication Procedures which will demonstrate that all required information is available to fabrication personnel	Zack waiting for BA approval of Shop QAM	E6-1-83	
			S&L to include a review for Technical adequacy of components fabricated to "old" procedures and travelers	S&L Technical Evaluation Program submitted to IPC	A4-19-83	

1 KEY

BA - BA QA AUDIT
NIC - TO QA CHAIRMAN

VT - VERIFICATION
PDC - PDC ITEM

BAPS - PRA

RECOVERY PLAN(S) - HVAC

PAGE 21
REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
27	NR Region IV Report 9900785/ 82-01	Lack of appropriate qualitative acceptance criteria for shop welding inspection	Revise RQCP-19 to include additional acceptance criteria	1a RQCP-19 resubmitted to BA & S&L 1b All shop fabrication work halted per Zack CAR-30 1c Shop QAM returned with Conditional Accept Status	A11-5-82 A12-6-82 M4-11-83	Approval pending Shop QAM Review

BAPS - PRA

VT - VERIFICATION
BDC - BDC TEAM

BA - BA QA AUDIT
ED - ED QA CHECKLIST

1 KEY

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SQTD. COMPL. DATE	COMMENTS
28	NRC Region IV Report 99900785/82-01	Shop fabrication tickets did not address all fabrication operations	Provide training to PQCP-3 for fabrication and detailing personnel	Training performed according to Zack response to NRC BQA to verify by audit/surveillance that PQCP provides adequate direction and that training was performed	11-19-82 06-1-83	

BAPS - PRA

VT - VERIFICATION

BY - BA QA AUDIT

1 KEY

RECOVERY PLAN(S) - HVAC

PAF 21

REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
29	NRC Region IV Report 99900785/ 82-01	Inadequate review of purchase orders for approved materials	Zack revised Q.A. Program and Procedures to require Q.A. Dept. review of all purchase Orders	BAQA to perform surveillance to verify that Zack QA is performing review of P.O.'s	86-1-83	

1 KEY

BO - BA QA AUDIT
HQS TO QA COMPLIANCE

VT - VERIFICATION
HQC - HQC TRNG

BAPS - FRA

RECOVERY PLAN(S) - HVAC

PAGE 10
REV 0 4-20-83

ITEM NO.	REF. NO.	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
30	NRC Region IV Report 99900785/ 82-01	Zack's voided document file is not maintained up-to-date	Zack performed training to personnel	BAQA to perform surveillance to verify that training has been performed and that the "Void Document" file is current	E6-1-83	

KEY

BQ - BA QA AUDIT
TRO - TR QA SURVEILLANCE

VT - VERIFICATION
NRC - NRC ITEM

BAPS - PRA

RECOVERY PLAN(S) - HVAC

REV 0 4-20-83

REF. NO.	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
31	<p>NRC Region IV Report 99900785/ and checklists for 17 internal audits were missing</p> <p>Zack did not perform annual internal audits on all sections of the QA Manual. Plans and checklists for 17 internal audits were missing</p>	<p>Zack to include auditor training in Zack Training Program</p>	<p>WQA to perform surveillance to verify that training for auditors has been performed</p>	06-1-83	

BAPS - PRA

VT - VERIFICATION
NRC - NRC ITEM

BO - BA QA AUDIT
TP - TP QA SURVEILLANCE

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO. 1	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
32	NRC Region IV Report 99900785/82-01	Lack of documented training records for 1 welder and 2 auditors	<ol style="list-style-type: none"> 1. Training is being performed at Clinton site. 2. Training for all Cicero personnel to be completed by Feb. 1, 1983. 	<ol style="list-style-type: none"> 1. Training is on-going BQA and IPQA are performing surveillances of this training 2. BQA to perform surveillance that training has been performed at the Cicero facility 	<ol style="list-style-type: none"> E5-6-83 E6-1-83 	

BAPS - PRA

VT - VERIFICATION
NRC - NRC ITEM

BQ - BA QA AUDIT
IPQ - IP QA SURVEILLANCE

KEY

RECOVERY PLAN(S) - HVAC

PAGE 11
REV 0 4-20-83

NO.	REF. NO.	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
33	NRC Region IV 99900785/ 82-01	Lack of documentation of certification, evaluation, and eye exam for QC Inspectors. Lack of on-going training for QC Inspectors and some welders	Update all training records for Clinton and Cicero site personnel. Set up complete Cicero personnel files for all personnel	WQA to perform surveillance to verify that all training and qualification records are current and appropriate for Clinton and Cicero sites	86-1-83	

RAPS - PRA

BO - BA QA AUDIT
IPO - IP QA SURVEILLANCE
VT - VERIFICATION
IRC - IRC ITEM

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

REF. NO.	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
34	Written 10 CFR 21 evaluation reports were not prepared for identified deviations	<p>Back to perform training of personnel.</p> <p>Back to revise corp. procedure for 10CFR 21 actions.</p>	<p>BAQA to perform surveillance to verify that all training was performed.</p> <p>Review procedure changes when submitted</p>	<p>86-1-83</p> <p>86-1-83</p>	

BO - BA QA AUDIT
TPO - IP QA SURVEILLANCE

VT - VERIFICATION
NRC - NRC ITEM

BAPS - PRA

RECOVERY PLAN(S) - HVAC

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REV 0 4-20-83

ITEM NO.	REF. NO.	FINDING DESCRIPTION	CORRECTIVE ACTION	STATUS	SCHED. COMPL. DATE	COMMENTS
35	NRC Region IV 99900785/ 82-01	Non-conformance reports were signed by unauthorized parties	<ol style="list-style-type: none"> 1. Zack QA to review all site NCR's for proper execution 2. Zack performed training of personnel involved with NCR 	<ol style="list-style-type: none"> 1. Zack QA to review 2. BQA to perform surveillance to verify that training has been performed 	<ol style="list-style-type: none"> 1. 85-15-83 2. 86-1-83 	

BQ - BA QA AUDIT
IPQ - IP QA SURVEILLANCE

VT - VERIFICATION
NRC - NRC ITEM

BAPS - PRA



BALDWIN ASSOCIATES
ILLINOIS POWER COMPANY

HVAC Recovery Schedule

SWA 14, 15 & 20

DATE: 4-26-53

ACTIVITY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
ISSUE SWA 14, 15 & 20	★	★	★											
DEVELOPE & SUBMIT RECOVERY PLANS														
BACK REVISE & RESUBMIT QUALITY & CONSTRUCTION PROGRAM														
S&L ISSUE NEW HANGER DRAWINGS														
S&L ISSUE ECN TO K-2710														
EA REVIEW DESIGN DRAWINGS														
ZACK DEVELOPE WORK CONTROL PROGRAM														
BAQ DEVELOPE MANPOWER REQUIREMENTS														
ZACK ISSUE DOCUMENT TO PROCEDURE														
BA DEVELOPE INSPECTION POINT PROGRAM														
EAZA & S&L APPROVE PROCEDURES														
ZACK IMPLEMENT TRAINING PROGRAM														
PARTIAL LIFT SWA'S FOR INSPECTION														
EA FULL REVIEW ZACK DOCUMENTATION														
S&QA PERFORM FIELD VERIFICATION (IN ACCORDANCE WITH OVERINSPECTION PROGRAM)														
ZACK INSPECT COMPLETED SEISMIC WORK														
ZACK REINSPECT WORK IN PROGRESS														
BAHP QA SURVEILLANCES & AUDITS														
PROCESS & EVALUATE NONCONFORMANCES														
PARTIAL LIFT SWA'S FOR REWORK														
EAHP EVALUATE HVAC PROGRAM														
NRC CONFORMANCE & APPROVE PARTIAL LIFT SWA'S FOR NEW WORK														

DETAILED VERIFICATION PLAN
SITE INSTALLATION WORK

1.0 SAFETY RELATED INSPECTION DOCUMENTATION

- 1.1 Zack Quality has assembled and reviewed inspection documentation for all completed and in-process work. Inspection documentation found to be questionable or incomplete has been identified and assigned to the reinspection work scope.
- 1.2 The documentation for the VC system previously submitted to BA has been returned to Zack Quality Assurance for review. Questionable or incomplete documentation will be identified and reinspections performed as necessary.
- 1.3 Upon completion of all work, rework, and inspections for an HVAC system or (subsystem), documentation packages for that scope of work will be assembled and the documentation transferred to Baldwin Associates. Zack is developing procedures which will provide specific instructions for the assembly and contents of documentation turnover packages.
- 1.4 Baldwin Associates Quality Assurance will review and transmit to the B.A. Records Vault all acceptable HVAC documentation packages in accordance with BAQA Instructions and Procedures.
- 1.5 All HVAC Quality documentation which has been placed in the BA Records Center Vault will be reviewed in accordance with the IPC Records Verification Program.

DETAILED VERIFICATION PLAN
SITE INSTALLATION WORK

2.0 VERIFICATION OF INSTALLED AND ACCEPTED SAFETY RELATED WORK

- 2.1 Following transfer of systems (sub-systems, components) to BA; all Safety related, accessible HVAC work will be verified by the BAQA Verification Department, in accordance with their approved procedures and checklists. All non-conforming conditions will be evaluated for impact on inaccessible areas, in accordance with the Overinspection/Verification program. (see par. 5.0).
- 2.2 IPC Quality Assurance will perform surveillance of the BA field verification work.
- 2.3 Following acceptance of the work by the BA Verification Department, the IPC Overinspection Department will select a minimum of a 20% sample of accepted work for additional overinspection and acceptance. (see par. 5.0).

3.0 COMPLETED NON-SAFETY SEISMIC WORK

- 3.1 Zack will assemble new inspection packages for all completed non-safety seismic work. These packages will contain the new hanger drawings, inspection checklists, forms, etc.
- 3.2 Zack QC inspectors will inspect all accessible completed seismic work using new, approved inspection checklists, and procedures. All deviations will be identified and submitted for review by BA and IPC. All non-conforming conditions will be evaluated for impact on inaccessible areas.
- 3.3 BAQA will perform audits and surveillance of Zack's inspection effort.
- 3.4 IPQA will perform surveillances of Zack's inspection work.

DETAILED VERIFICATION PLAN

SITE INSTALLATION WORK

3.0 COMPLETED NON SAFETY SEISMIC WORK (Cont.)

3.5 After Zack QC acceptance of the completed non-safety seismic work, completed documentation packages will be forwarded to BAQA. (See par. 1.3, 1.4, 1.5).

3.6 Following a review and acceptance by BAQA, all work will be subjected to BA Field Verification. All accessible Non-Safety Seismic work will be subjected to 100% inspection by the BAQA Verification Department. (see par. 5.0).

4.0 IN-PROCESS SAFETY AND SEISMIC WORK

4.1 Zack will assemble new work control packages for all in-process work. These packages will contain the new hanger drawings, and new inspection checklists, forms, etc.

4.2 Zack QC inspectors will verify, by inspection, that partially completed work conforms to all specification and drawing requirements. All deviations will be identified and submitted for review by BA and IPC.

4.3 After disposition of the deviations, the Stop Work Action(s) will be released for rework or repair.

4.4 After all deviations have been dispositioned and with NRC concurrence, the Stop Work Action(s) will be released for completion of in-process work and initiation of new work.

5.0 OVERINSPECTION - VERIFICATION

5.1 The IPC Overinspection Plan, Revision 1, phases II and III are being modified in their application to HVAC work by initially expanding the amount of verification by BAQA to 100% of completed work and to a minimum of 20% overinspection by IPQA.

DETAILED VERIFICATION PLAN
SITE INSTALLATION WORK

5.0 OVERINSPECTION - VERIFICATION

5.1 (Cont.)

These amounts of verification and overinspection will continue until a sufficient level of confidence is gained in the acceptability of the Zack program to allow a sampling plan to be implemented.

DETAILED VERIFICATION PLAN
CICERO SHOP FABRICATED WORK

6.0 SAFETY RELATED AND SEISMIC WORK

- 6.1 All Safety Related and Seismic work, delivered but not installed, will be reinspected by Zack Quality Control prior to installation.
- 6.2 Previously installed Safety Related and Seismic work will be reinspected by Zack Quality Control in accordance with an approved sampling plan, concurrent with the inspection/reinspection effort identified in paragraphs 3.0 and 4.0.
- 6.3 Shop Fabrication, and inspection documentation will be reviewed by Zack Quality Assurance prior to incorporation into Turnover Packages. Any discrepancies will be identified in accordance with the Zack Documentation Turnover Procedure.
- 6.4 BAQA has initiated a 100% shipping release hold point at the Cicero Fabrication Facility. All documentation is being reviewed and accepted prior to use at the Clinton Site. All documentation for material previously shipped is being reviewed.
- 6.5 The BA Verification of installed work in paragraphs 2.0 and 3.6 will include shop fabricated work.

PREREQUISITES FOR LIFTING SWA 14, 15, and 20

A. For Inspection:

1. Approved Zack Quality Assurance Manual.
2. Approved Zack Quality Procedures (FQCP's).
3. Approved Zack Construction Procedures (FCP's)
4. Approved Zack Training Program & All Training Completed.
5. Definition of scope of completed work.
6. Released "For Construction" Sargent & Lundy individual hanger drawings.
7. Baldwin Associates QA Inspection Point Program and Audit/Surveillance Schedule.
8. Disposition of all material certification NCR's on IPC 50.55(e) 81-04.
9. Identification of all actions required to address Zack CAR's and closure of those which can be closed without inspection.

B. For Rework/New Work

In addition to 1 through 9 above:

1. Identification and disposition of all non-conforming conditions identified during the reinspection phase.
2. Evaluation of types of conditions identified and incorporation of means to prevent reoccurrence into the Zack program.
3. Approved Zack welding and Welding Procedure Qualification Plan and Procedures.
4. Welder Certification and Training.
5. NRC Concurrence.

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