STONE & WEBSTER MICHIGAN, INC.

P.O. BOX 2325, BOSTON, MASSACHUSETTS 02107

Mr. J. G. Keppler
Administrator, Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

August 30, 1983

THIRD PARTY CONSTRUCTION IMPLEMENTATION OVERVIEW PROGRAM
MIDLAND NUCLEAR COGENERATION PLANT

This letter confirms commitments made by Stone & Webster Michigan, Inc. (Stone & Webster) to NRC at the Public Meeting on August 25, 1983, at Midland, Michigan in reference to the Construction Implementation Overview Program (CIO). As stated in the meeting, Stone & Webster will:

1. Implement the CIO Program in a manner consistent with NRC regulations. Program details are described in program documents previously provided to NRC and the attached copies of graphics used in the Stone & Webster presentation on August 25, 1983.

2. Revise the Project Quality Assurance Plan to address Stone & Webster audits of the CIO Program. An initial audit will be conducted within 90 days of NRC approval of the CIO Program followed by audits on a twice a year basis. This audit schedule will be increased if activities warrant.

3. Revise the Project Quality Assurance Plan to address Stone & Webster trend analysis. This trending will be conducted to ensure that sampling levels and changes thereto are consistent with the performance of Consumers Power Company.

We trust that these commitments are in agreement with your understanding of what was stated at the Public Meeting, and meet with your approval.

P. A. Wild
Vice President

Enclosure

SEP 2 1983

cc: JWCook-CPCo

TEAM EXPERIENCE

S. BARANOW

PROGRAM MANAGER

15 YEARS NUCLEAR EXPERIENCE
10 YEARS NUCLEAR SITE EXPERIENCE
5 DIFFERENT SITES

F. BEARHAM

SUPERVISOR OF PROGRAM EVALUATION

25 YEARS OF NUCLEAR EXPERIENCE
13 YEARS NUCLEAR SITE EXPERIENCE
8 DIFFERENT SITES

J. THOMPSON

SUPERINTENDENT OF PHYSICAL VERIFICATION

14 YEARS NUCLEAR EXPERIENCE
12 YEARS NUCLEAR SITE EXPERIENCE
4 DIFFERENT SITES

CONSTRUCTION IMPLEMENTATION OVERVIEW

PROGRAM - CIO

BACKGROUND

CONSTRUCTION COMPLETION PROGRAM-CCP

STONE & WEBSTER PROPOSED AS INDEPENDENT THIRD PARTY

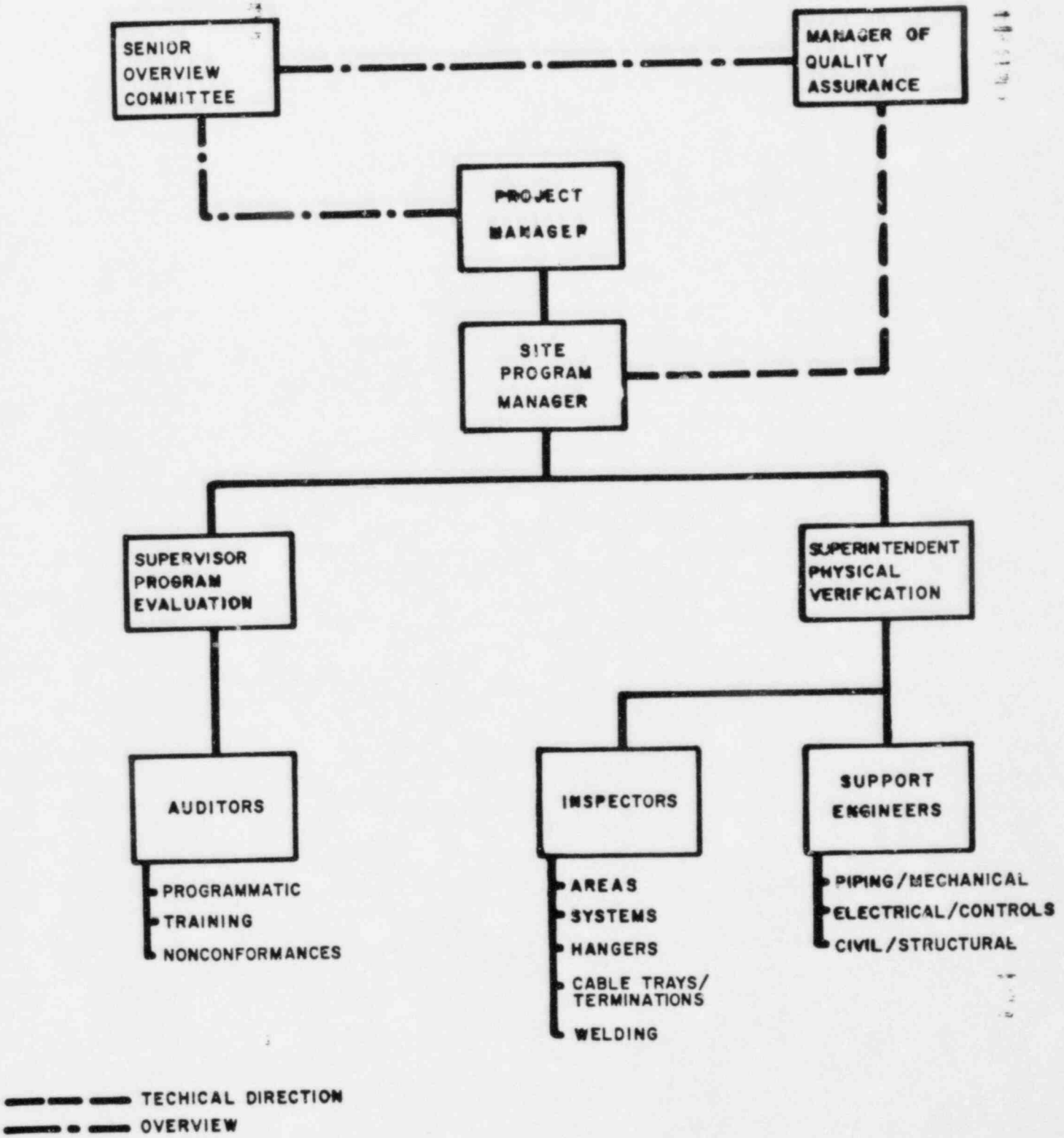
SCOPE

INDEPENDENTLY ASSESS IMPLEMENTATION OF CCP

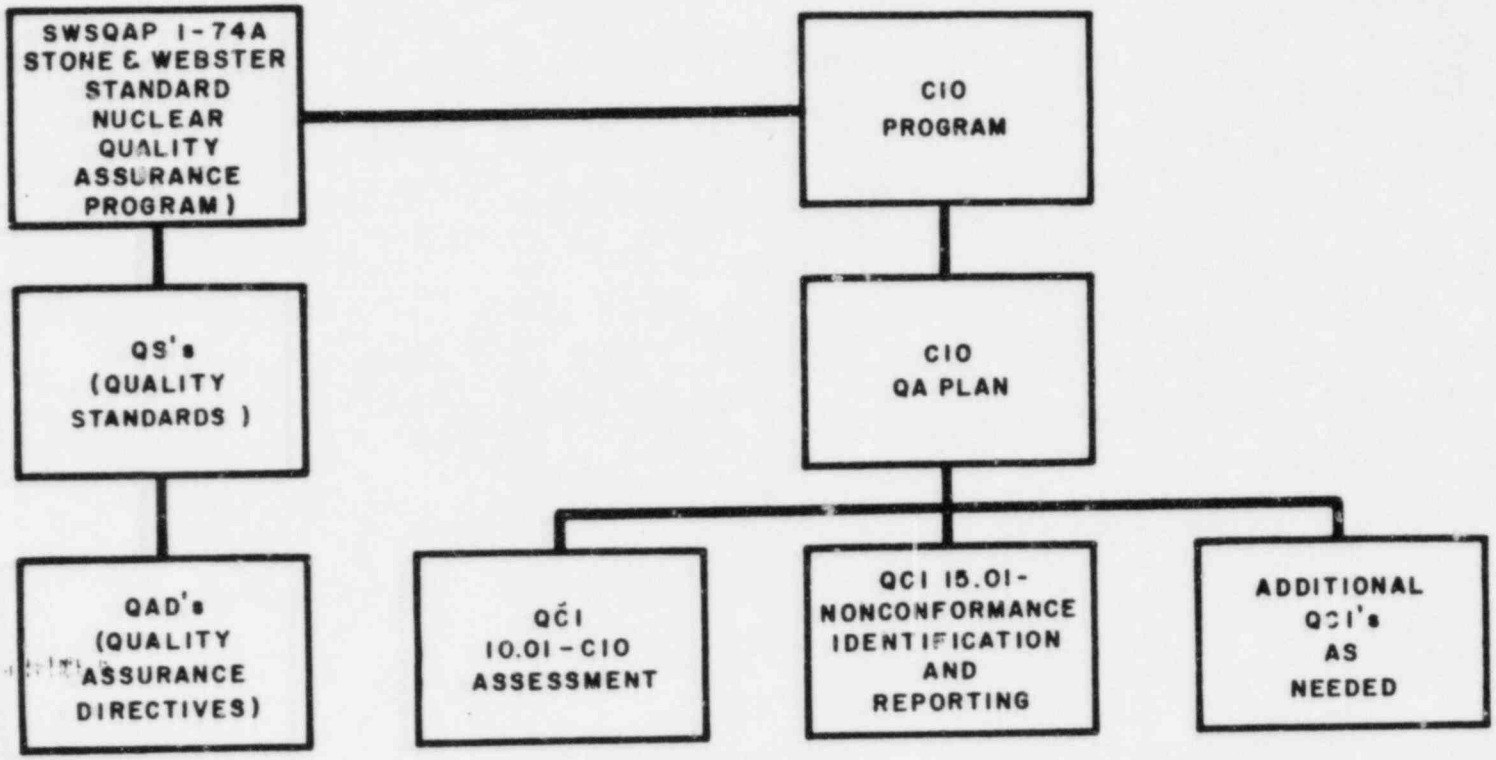
ACTIVITIES:

- ✔ PHASE I PLANNING
- ✔ MANAGEMENT REVIEWS
- ✔ INSTALLATION AND INSPECTION STATUS
- ✔ VERIFICATION OF COMPLETED INSPECTIONS (QVP)
- ✔ HVAC/ZACK
- ✔ NSSS
- ✔ SPATIAL SYSTEM INTERACTION PROGRAM (SSIP)
- ✔ PHASE II

CIO ORGANIZATION



DOCUMENT TREE



SWEC CIO PROGRAM

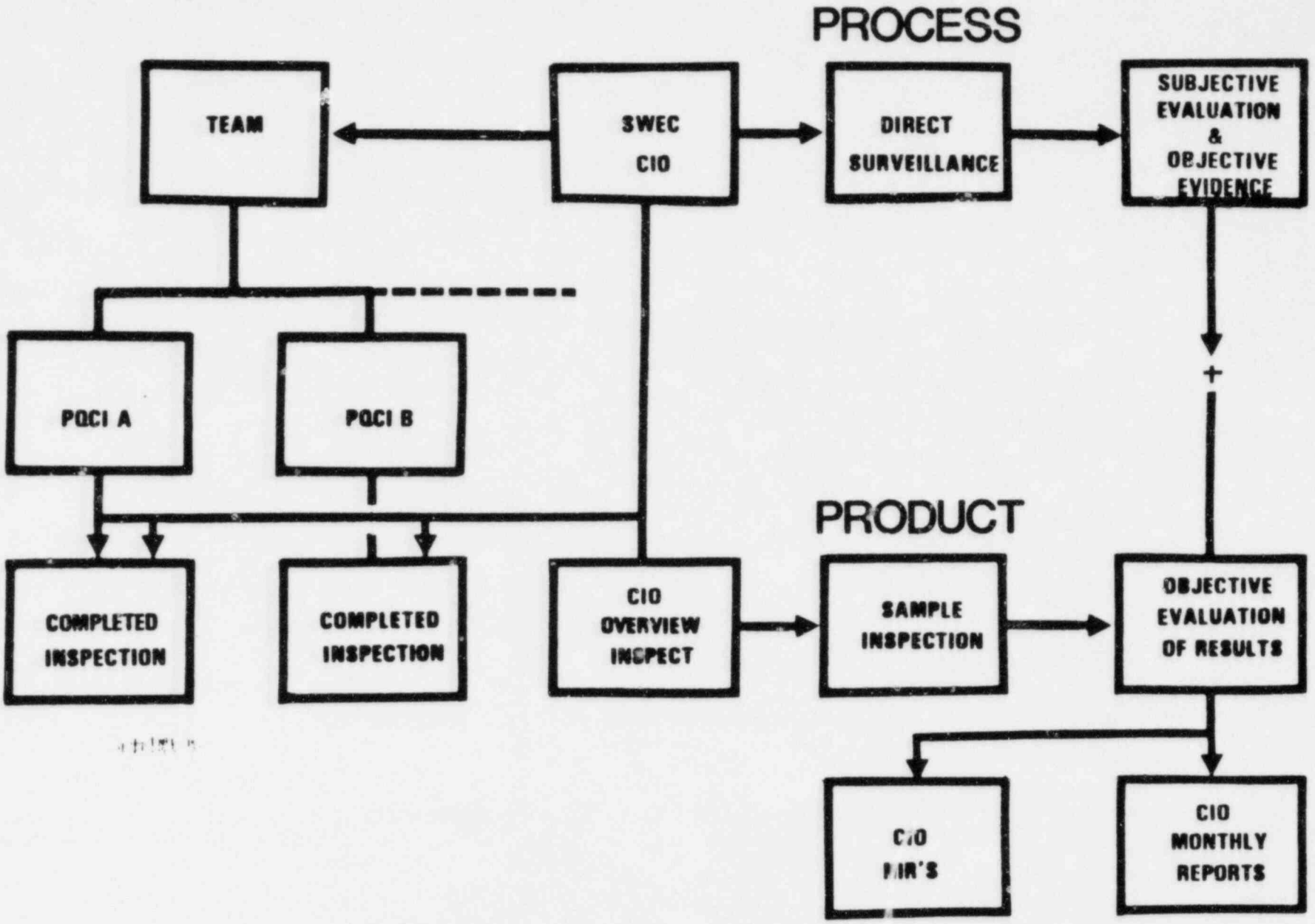
- OBJECTIVE IS TO ASSESS QVP AND CCP RESULTS TO ESTABLISH THE PROGRAM'S EFFECTIVENESS.
- KNOWN STATISTICAL METHODS WILL BE USED TO ESTABLISH THE NUMBER OF INSPECTIONS/ASSESSMENTS.
- TECHNICAL EVALUATIONS WILL BE MADE TO ESTABLISH THE SIGNIFICANCE OF NONCOMPLYING CONDITIONS.
- CORRECTIVE MEASURES WILL BE REQUIRED IF CPCo PROGRAMS PERSONNEL OR IMPLEMENTATION ARE TURNING OVER LOTS WHICH CONTAIN SIGNIFICANT DEFICIENCIES.

ASSESSMENT MATRIX
FOR
PHYSICAL VERIFICATION GROUP

ASSESSMENT ELEMENTS	REVIEW OF PQCIs	REVIEW OF SUPPORTING DOCUMENTS	CHECKLIST DEVELOPMENT	EVALUATION	VERIFICATION
1. STATUS					
INSTALLATION		★	★	★	★
INSPECTION	★	★	★	★	★
2. QUALITY VERIFICATION PROGRAM					
ACCESSIBLE	★	★	★		★
INACCESSIBLE	★	★	★	★	
3. PHASE II	★	★	★	★	★

ASSESSMENT MATRIX
FOR
PROGRAM EVALUATION GROUP

ASSESSMENT ELEMENTS	REVIEW OF IMPLEMENTING DOCUMENTS PROCEDURES	CHECKLIST DEVELOPMENT	EVALUATION	VERIFICATION
1. PROGRAMMATIC				
MANAGEMENT REVIEW MEETINGS	★	★	★	
CCP ORGANIZATION	★	★	★	
MPQAD ORGANIZATION	★	★	★	
INSPECTION PLANS	★	★	★	
NRC AND CIO HOLD POINTS		★		★
COMMITMENTS TO NRC		★		★
2. PROCEDURES				
CONSTRUCTION PROCEDURES	★	★	★	★
MPQAD PROCEDURES	★	★	★	★
3. TRAINING				
CCP TEAMS	★	★	★	
MPQAD INSPECTORS	★	★	★	
CONSTRUCTION CRAFT	★	★	★	
4. RESOLUTION OF NONCONFORMANCES	★		★	★


PROCESS
TEAM
SWEC
CIO
DIRECT
SURVEILLANCE
SUBJECTIVE
EVALUATION
&
OBJECTIVE
EVIDENCE
PQCI A
PQCI B
PRODUCT
COMPLETED
INSPECTION
COMPLETED
INSPECTION
CIO
OVERVIEW
INSPECT
SAMPLE
INSPECTION
OBJECTIVE
EVALUATION
OF RESULTS
CIO
MONTHLY
REPORTS

TEAM MONITORING

INITIAL

- FULL TIME CIO MONITOR ASSIGNED TO OVERVIEW EACH TEAM'S ACTIVITIES AND ALL INSPECTIONS WITHIN THE PERVIEW OF THE TEAM.

- A STATISTICAL SAMPLE OF MPQAD INSPECTIONS WILL BE TAKEN AND EVALUATED BY INDEPENDENT CIO INSPECTION.

SUBSEQUENT

- IF TEAM PERFORMANCE AND INSPECTION RESULTS ARE DEEMED SATISFACTORY – FULL TIME CIO MONITORING WILL BE ADJUSTED DOWNWARD. INDEPENDENT SAMPLING INSPECTIONS WILL BE MAINTAINED.

- IF TEAM PERFORMANCE OR INDEPENDENT INSPECTION RESULTS REVEAL UNSATISFACTORY, CPCO CCP/QVP FULL TIME CIO MONITORING WILL BE MAINTAINED.

AREAS TO BE CLOSELY MONITORED

TRAINING

WELDER QUALIFICATION

PRODUCTION WELDING

DOCUMENT CHANGE CONTROL

CABLE PULLING

CONTROL OF PURCHASE MATERIAL

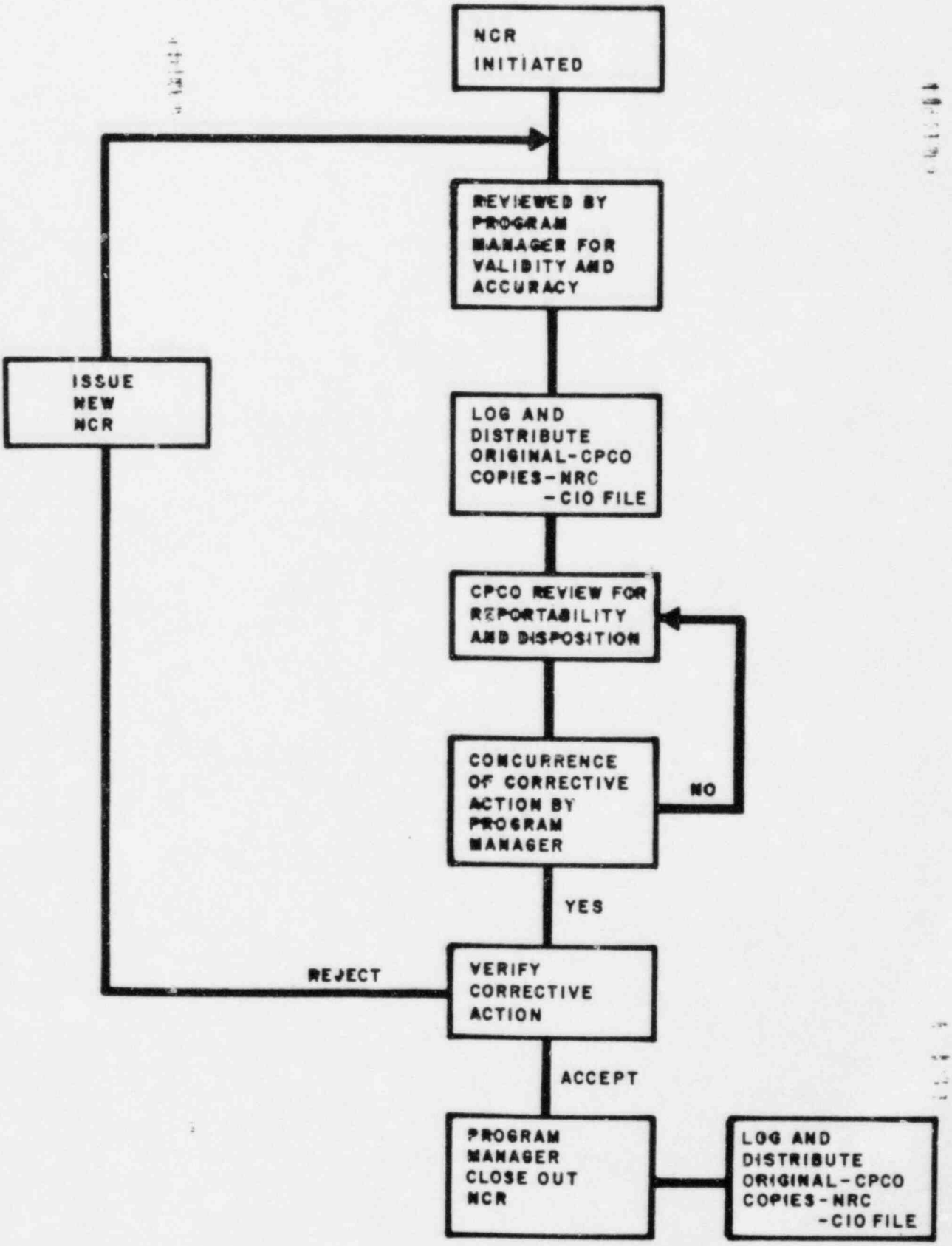
QA RECORDS

STORAGE / PREVENTIVE MAINTENANCE

CORRECTIVE ACTION FOR NONCONFORMANCE

TRENDING & ROOT CAUSES

FLOW CHART FOR NONCONFORMANCE REPORTS



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SAMPLING OVERVIEW

- SWEC WILL USE MIL-STD-105D AS THE BASIC STATISTICAL METHOD.

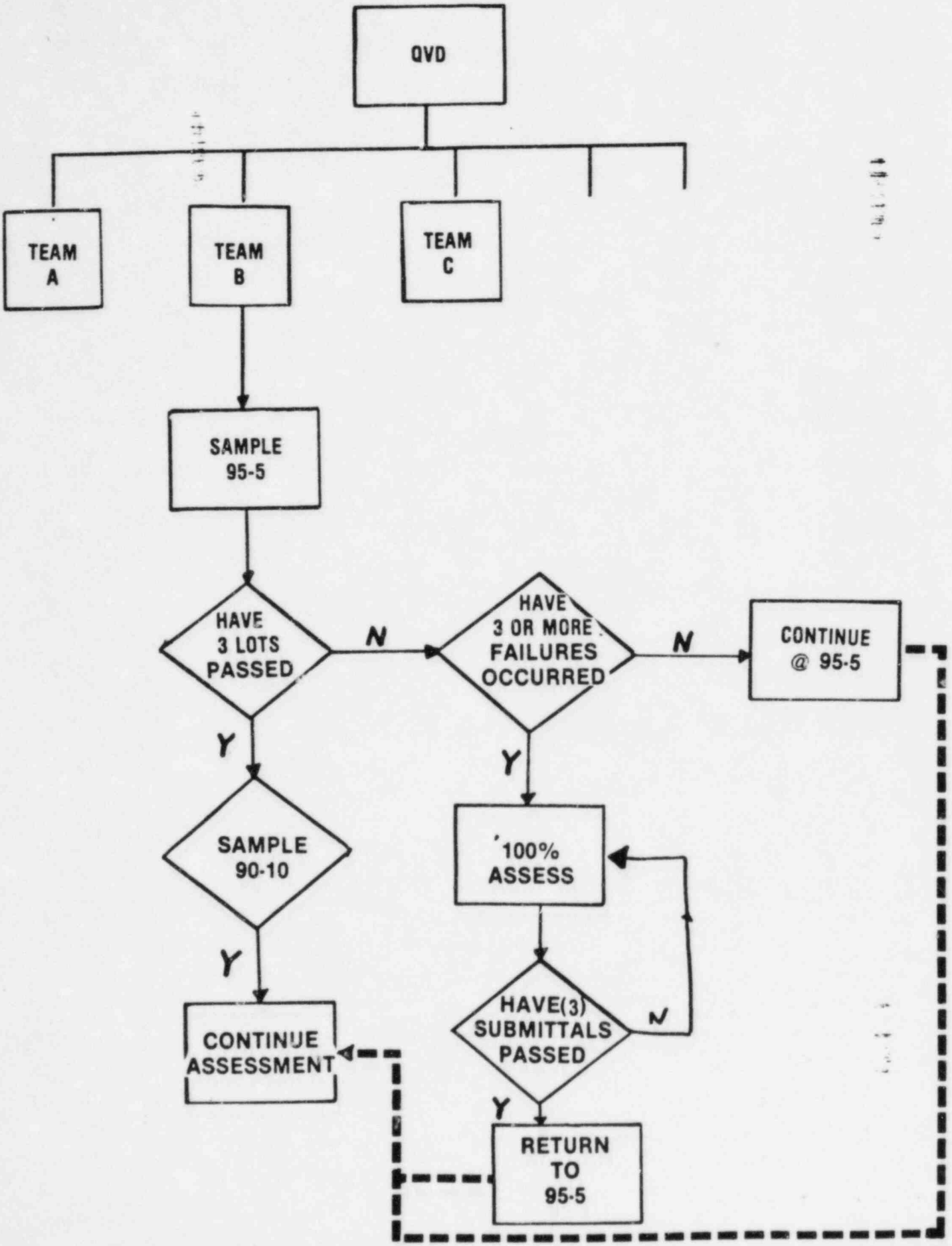
- COMPLIANCE BASELINE WILL BE ESTABLISHED AS FOLLOWS:

  - EACH QVP TEAM'S WORK WILL BE SAMPLED USING 95-5 CONFIDENCE FOR 1ST (3) SUBMITTALS

  - IF ALL PASS THEN SAMPLING WILL BE REDUCED TO 90-10 CONFIDENCE

  - IF A TEAM HAS SINGLE FAILURE BASED ON SIGNIFICANT ATTRIBUTE THEN RETURN TO 95-5. THIS WILL CONTINUE UNTIL (3) CONSECUTIVE PASSES ARE ACHIEVED.

  — ANY TEAM SUBMITTING (3) CONSECUTIVE FAILED LOTS WILL BE SUBJECT TO RETRAINING AND 100% INSPECTION UNTIL IT IS JUDGED SAFE TO RETURN TO SAMPLING - NORMALLY THIS WILL BE (3) CONSECUTIVE PASSED LOTS WITH NO SIGNIFICANT CONDITIONS OBSERVED.

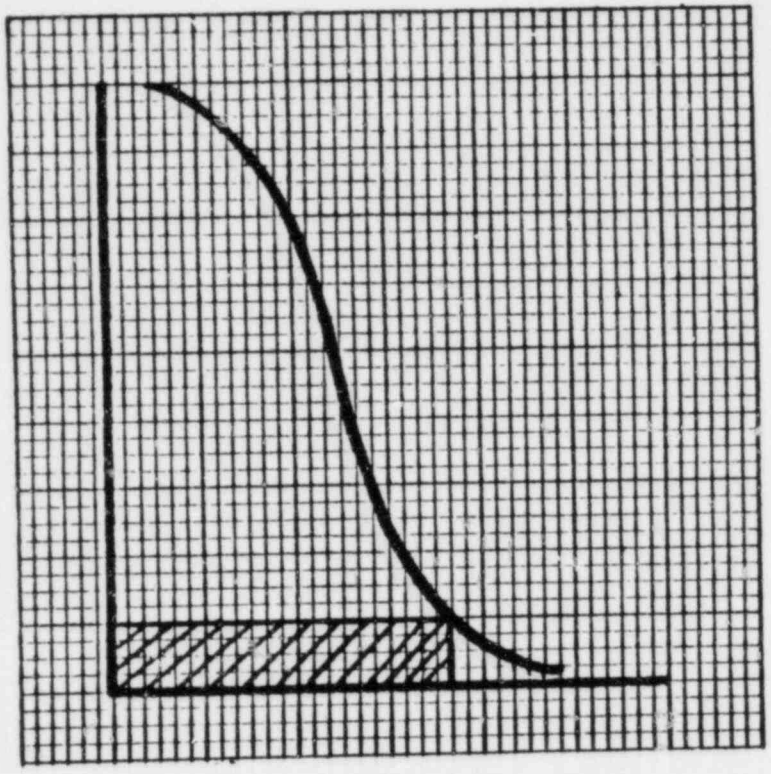

QVD
TEAM A
TEAM B
TEAM C
SAMPLE 95-5
HAVE 3 LOTS PASSED
N
HAVE 3 OR MORE FAILURES OCCURRED
N
CONTINUE @ 95-5
Y
Y
SAMPLE 90-10
100% ASSESS
Y
HAVE(3) SUBMITTALS PASSED
N
CONTINUE ASSESSMENT
Y
RETURN TO 95-5

A COMPARISON BETWEEN SAMPLE SIZES

MS-105D LOT SIZE (N)	SAMPLE SIZE (n) @ 95-5	@ 90-10	@ 20%*
2 to 8	ALL	ALL	1 / 2
9 to 15	ALL	ALL	2 / 3
16 to 25	ALL	All to 20	4 / 5
26 to 50	ALL	20	6 / 10
51 to 90	50	20	11 / 18
91 to 150	50	20	19 / 30
151 to 280	50	32	21 / 56
281 to 500	50	50	57 / 100
501 to 1200	80	80	101 / 240
1201 to 3200	125	125	241 / 640
3201 to 10,000	200	200	641 / 2000

*Values rounded up to the nearest integer for greater confidence

LIMITING QUALITY



- Designed for "isolated" lot vs. continuous sampling
- Provides protection by "fixing" risk of accepting "bad" products
- Provides greater discrimination by designating AQL to avoid greater than allowable proportion defective

SAMPLING OVERVIEW

- **SWEC APPROACH WILL ENSURE**
  - OBJECTIVE ASSESSMENT
  - REPORTS TO NRC, CPCo, PUBLIC
  - CORRECTIVE ACTION
- **PERFORMANCE WILL BE REWARDED AND ENCOURAGED BY SAMPLE REDUCTIONS, WHEN JUSTIFIED.**

SAMPLING OVERVIEW

- UPON COMPLETION OF CIO, SWEC WILL STATE:
  - THAT CPCO's, QVP AND CCP HAVE BEEN ASSESSED AND FOUND ACCEPTABLE.
  - THAT ALL SIGNIFICANT CONDITIONS ADVERSE TO QUALITY HAVE BEEN IDENTIFIED AND RESOLVED.

A CONCLUSION THAT MIDLAND STATION MEETS OR EXCEEDS ALL APPLICABLE REGULATIONS, CODES AND STANDARDS.

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Mr. J. W. Keppler
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799 Roosevelt Road
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September 9, 1983

THIRD PARTY CONSTRUCTION IMPLEMENTATION OVERVIEW PROGRAM
MIDLAND NUCLEAR COGENERATION PLANT

Stone & Webster Michigan, Inc. (Stone & Webster) letter of August 30, 1983, confirmed commitments made to the NRC at the Public Meeting on August 25, 1983, and forwarded copies of the graphics used in the Stone & Webster presentation. This letter forwards a summary of the presentation as requested by Mr. J. J. Harrison on September 6, 1983.

P. A. Wild
Vice President

APA:efb

Enclosure

cc: JWCook-CPCo.

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SUMMARY OF PRESENTATION TO NRC ON AUGUST 25, 1983
CONSTRUCTION IMPLEMENTATION OVERVIEW (CIO) PROGRAM

Background to CIO

The Construction Completion Program (CCP) has been developed by Consumers Power Company to control the construction and quality activities needed to complete the Midland Nuclear Power Station. One feature of the CCP is the use of an independent third party to assess the CCP's effectiveness in evaluating existing systems, structures, and components and efforts to complete unfinished work.

Consumers Power Company has proposed Stone & Webster as the third party. This selection was based on Stone & Webster's independence with respect to the work to be performed, and on Stone & Webster's experience and technical capabilities to do the job.

Scope of CIO Program

The scope of the CIO Program is to independently assess CCP adequacy. CCP activities presently assigned to the CIO team for assessment are:

- Phase I Planning
- Management Reviews
- Installation and Inspection Status
- Quality Verification Program (QVP)
- Phase II

Activities outside of the CCP, but included in the CIO Program for assessment, are:

- HVAC/ZACK
- NSSS/B&W
- Spatial System Interaction Program (SSIP)

CIO Organization

The CIO Team is made up of two functional groups - the Program Evaluation Group and the Physical Verification Group. The Program Evaluation Group is responsible for assessing compliance with programmatic provisions of the CCP, plans, procedures, commitments, personnel qualifications, training programs, organizational practices, and nonconformances. The Physical Verification Group is responsible for assessing compliance of CCP team, MPQAD, construction, and craft personnel with pertinent procedures and instructions.

The Program Manager is responsible for directing the day-to-day activities of these two groups. The Program Manager receives technical direction from the Stone & Webster Manager of Quality Assurance and resource support from the Project Manager.

A Senior Overview Committee is responsible for monitoring the performance of the CIO Program and providing direction when appropriate. Monitoring will be done by reviewing reports, correspondence, and nonconformances and observing site activities during periodic visits.

Experience Level of CIO Team

Key members of the CIO Team have significant experience with the construction of nuclear power stations. The Program Manager has 15 years of nuclear experience with 10 of those years spent at 5 new construction sites. The Supervisor of Program Evaluation has 25 years of nuclear experience with 13 of those years spent at 8 new construction sites. The Superintendent of Physical Verification has 14 years of nuclear experience with 12 of those years spent at 4 new construction sites.

Supporting Documents for CIO Program

The Stone & Webster Corporate Quality Assurance Program is described in the NRC approved topical report, SWSQAP 1-74A, "Stone & Webster Standard Nuclear Quality Assurance Program". This base document is supplemented by volumes of Quality Standards and Quality Assurance Directives. Provisions of these documents that are applicable to a project and special instructions that are needed to accomplish unique work items, are covered by project procedures and instructions. Corporate generic procedures and instructions are available for use or as models for project document development.

For the CIO effort, four project procedures have been approved by the Corporate Manager of Quality Assurance to supplement Corporate documents in carrying out the assessment of the CCP. These procedures are the Third Party Construction Implementation Overview Program, which establishes the CIO Program; the Project Quality Assurance Plan, which describes quality assurance provisions for the project; QCI 10.01, which describes the procedure for conducting the assessment; and QCI 15.01, which describes the procedure for processing Nonconformance Identification Reports. Additional project procedures will be issued as needed to cover unique items that arise during the CIO effort.

CIO Methodology

The methodology to be used in assessing the installation and inspection status and Quality Verification Program (QVP) of the CCP consists of (1) surveying the activities of each CCP team and all inspections within the purview of each team to evaluate the process being used to carry out the CCP and then, (2) taking a statistical sample of MPQAD inspections and evaluating the results by conducting independent inspections with CIO team members to assess the final product. A full time monitor from the CIO team will be assigned to each CCP team until team performance and inspection results are deemed satisfactory. Full time monitoring might then be adjusted downward, but independent sampling of QVP inspections would continue to ensure that the overall CCP process is being effectively implemented. If independent inspections indicate that problems are developing, full time monitoring will be restored.

Sampling of QVP inspections will be conducted using MIL-STD-105D as the basic statistical method. MIL-STD-105D was selected because it is nationally recognized. Sample lots will be based on the number of inspection attributes completed during a period of time within a CCP team's area/module. Attributes selected for inspection will be assembled to cover the various commodities and inspectors involved and previously identified weaknesses; such as, QA records, control of purchase material, design change control, production welding, document change control, cable pulling, training, etc. Sample size will be based on a 95-5 confidence level. Inspection results, including nonconformances, will be collected, analyzed, and trended to determine the appropriateness of inspection levels and will be used to evaluate changes in those levels.

One of the objectives of the CIO Program is to assess the ability of MPQAD to identify deficiencies in the plant. Sampling the product from MPQAD inspections will provide a reliable assessment of that effectiveness.

Programmatic and training aspects of the CCP will be assessed by reviewing implementing documents and commitments and then developing checklists for use by CIO team members in verifying compliance by surveillance and document reviews.

Deficiencies identified by CIO team members, and not previously reported by MPQAD, will be documented on Nonconformance Identification Reports. These reports will be sent to Consumers Power Company and the NRC, tracked to ensure that satisfactory corrective action is taken, and summarized on weekly reports and during monthly public meetings.

The methodology to be used by Stone & Webster in carrying out the CIO Program will ensure:

- An objective assessment of the CCP
- Corrective action for problem areas
- Awareness of Consumers Power Company, NRC, and Public about the effectiveness of the CCP through reports and meetings

Stone & Webster Corporate Audits

The CIO Program will be audited by the Stone & Webster Quality Assurance Cost & Auditing Division on a regular basis to ensure the adequacy of the CIO Program's procedures, personnel, and implementation.

Manning Plan for CIO Team

Nine members of the CIO team are currently on site. These people have been reviewing documents; preparing checklists; and evaluating training, organizational practices, and procedures.

Plans are to have one team member assigned to each CCP team, five auditors to conduct the program evaluation function, one to three support engineers depending on the workload, two group supervisors, and the program manager. Anticipating that some 12 CCP teams will be in operation initially, a team of some 21 people will be required. When the anticipated 23 teams become operational, some 32 people will be required. These are minimum numbers and are based on a single shift work schedule. The situation is a dynamic one. As conditions change and more people are needed to carry out the provisions of the CIO Program, more people will be brought in.

Summary

Stone & Webster has designed and constructed a number of nuclear power stations and knows the right way to do the work. The CIO Program will be carried out to ensure that the Midland plant is built in accordance with applicable codes, standards, and regulations.