



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION III  
 799 ROOSEVELT ROAD  
 GLEN ELLYN, ILLINOIS 60137

*Gardner*

SEP 10 1984

MEMORANDUM FOR: James G. Keppler, Regional Administrator  
 FROM: C. E. Norelius, Director, Division of Reactor Projects  
 SUBJECT: PROGRESS REPORT - NRC ONGOING INSPECTION OF BRAIDWOOD  
 CONSTRUCTION ASSESSMENT PROGRAM (BCAP)

The following information was provided by the NRC inspector assigned to follow the BCAP. It covers the period of August 20 through August 31, 1984. Similar type progress reports will be issued between the normal monthly inspection reports to inform NRC management of ongoing BCAP activities and issues.

BCAP Status

The Construction Sample Reinspection (CSR) and Reverification of Procedures to Specification Requirements (RPSR) BCAP elements are approximately three weeks behind schedule. The Review of Significant Corrective Action Programs (RSCAP) BCAP element was initiated on August 20, 1984 (approximate date). Delays in initiating CSR and RPSR activities are primarily due to difficulties in the areas of CSR and RPSR procedure preparation, review, and approval. A stop work was issued against the RSCAP program on August 28, 1984, as a result of NRC and Evaluation Research Corporation (ERC) concerns. No BCAP QC inspectors have completed the certification process at this time although training and certification activities have begun in several disciplines. It is possible that the licensee may initiate CSR and RPSR activities during the week of September 3, 1984. ERC personnel have been onsite performing BCAP reviews. Total BCAP manpower level is presently 73 personnel.

Review of BCAP Program

During this review period the inspector performed the following reviews of BCAP activities:

- 1) discussed the BCAP program with various BCAP personnel
- 2) met with ERC personnel to discuss the role of the ERC organization in the BCAP program
- 3) reviewed all approved BCAP procedures and discussed comments with the licensee

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- 4) reviewed the RSCAP ongoing efforts related to safety-related pipe supports
- 5) reviewed training program for BCAP personnel
- 6) attended meetings between CECo and ERC to discuss ERC comments to BCAP procedures
- 7) reviewed the ERC QA plan
- 8) reviewed ERC personnel financial disclosure statements
- 9) reviewed ERC personnel resumes
- 10) audited a BCAP indoctrination training session
- 11) met with RPSR personnel to discuss the status of the RPSR element

#### Review of ERC Manpower Allocation for Braidwood

ERC expects to maintain approximately 5 personnel onsite to support the BCAP overview. The inspector expressed a concern to ERC that since the licensee hopes to have over 30 QC inspectors performing a total of 500 inspections per week, the ERC manpower estimates may be inadequate.

#### Problem Areas Identified

Three significant problems were identified during this review period. The first dealt with the licensee's persistence in initiating the BCAP program without first ensuring that all programmatic requirements were met. This resulted in a stop work being initiated for the RSCAP area of the BCAP program. Events leading up to this stop work occurred as follows:

- 1) On August 20, 1984, during the inspector's entrance meeting, the inspector cautioned the licensee not to proceed with BCAP activities until such time as CECo management, QA, and ERC had reviewed the program for compliance to programmatic requirements. (e.g., procedures reviewed, training verified, etc.)
- 2) The licensee initiated RSCAP activities on or before August 20, 1984.
- 3) ERC met with the licensee on August 28, 1984, and provided comments on CSR, RPSR, and RSCAP procedures. One of the comments on a RSCAP procedure was identified by ERC as requiring resolution prior to commencing the RSCAP portion of BCAP.
- 4) The licensee placed a hold on RSCAP activities until the ERC comment is satisfied (this was not a QA hold).

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The second problem dealt with the adequacy of BCAP procedure BCAP-06, Observation and Discrepancy/Concern Processing. This procedure is key to the success of the BCAP program. Both the NRC and ERC commented that the procedure, as written, was confusing and could result in errors in the handling of observations and discrepancies identified during the BCAP program. The licensee wanted to commence the CSR activities and, in parallel, begin to initiate changes to this procedure. The inspector strongly advised the licensee to not initiate CSR activities until the procedure was revised, approved, and training to the revised procedure completed. The licensee subsequently initiated steps to revise the subject procedure and informed the inspector that CSR activities would not begin until the procedure revision was completed.

The third problem dealt with the training program for BCAP personnel who are performing functions other than QC inspections. The BCAP scope document states that individuals performing BCAP activities other than QC inspections will be trained in a manner appropriate for the activities they are performing. The BCAP procedure which implements this requirement is BCAP-01, Program Indoctrination For Employees. In reviewing the training records for BCAP personnel the inspector determined that there are no specified training requirements for the various BCAP functions being performed. The Administrative Engineer who was required to review the training provided to BCAP personnel was not signing the BCAP Indoctrination Record attesting that training was completed. He could not since there were no established requirements and new training was being given as procedures were being issued. This is unacceptable in view of the fact that the RSCAP program was already underway. The inspector was informed that QA had performed a surveillance on August 24, 1984, and had made similar findings. A CAR had been issued by QA on August 27, 1984. However, no stop work order had been issued.

**Original Signed by C. E. Norelius**

C. E. Norelius, Director  
Division of Reactor Projects

cc: R. C. DeYoung, OIE  
J. N. Grace, IE  
D. G. Eisenhut, NRR  
M. Wallace, CECO  
Braidwood SRIs

RIII  
Gardner/db  
09/07/84

RIII  
Forney  
9/07

RIII  
RFW  
Warnick  
9/7

RIII  
Norelius  
9/8



**Commonwealth Edison**  
One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

Attachment 2

September 13, 1984

Mr. James G. Keppler  
Regional Administrator - Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Subject: Status Briefing on BCAP Held on September 6, 1984 at Mazon EOF

Reference: (a) J.J.O'Connor letter to J.G. Keppler "Braidwood Construction Assessment Program (BCAP)" dated June 22, 1984

Dear Mr. Keppler:

The first open briefing on the status of the BCAP effort (Reference (a)) was provided to the NRC on September 6, 1984 at Mazon EOF. Forwarded herewith is a meeting summary including a copy of the visual-aid material used in the presentations. The next briefing meeting is scheduled for 9:00 a.m. on October 4, 1984 at the Mazon EOF.

Also forwarded herewith for your information is the BCAP Director's Progress Report for the month of August 1984.

Please direct any questions relating to BCAP to Mike Wallace, Assistant Manager of Projects and Braidwood Project Manager.

Very Truly yours,

David H. Smith  
Nuclear Licensing Administrator

Attachments

cc: NRC Resident Inspector - Braidwood  
NRC BCAP Inspector - Braidwood

(0295J)

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Meeting Summary

BCAP NRC/CECo/ERC Monthly Meeting

September 6, 1984 9:00 a.m.

Mazon EOF

The meeting was opened with a brief statement by the NRC Region III Administrator, J. Keppler, giving the context of and purpose for this meeting, that is, to discuss the BCAP, its progress, and the Independent Expert Overview Group's (IEOG) review of the BCAP.

The following is the agenda utilized for the remainder of the meeting.

I. Introduction

Presented by the CECo Manager of Projects to provide the major topics of the presentation (see enclosure 1).

II. BCAP Status Overview

Presented by the Braidwood Project Manager to provide a history and context of the BCAP (see enclosure 2).

III. BCAP Progress

Presented by the BCAP Director to provide the BCAP's achievements to date and the current status (see enclosure 3).

IV. BCAP QA Overview

Presented by the Assistant Manager of Quality Assurance to describe the overview activities to date of the CECo BCAP QA group (see enclosure 4).

V. IEOG Progress Report

Presented by the Project Manager of the IEOG to describe the overview activities to date of the IEOG (see enclosure 5).

Additional items discussed during the meeting are included in enclosure 6. The attendance for the meeting is provided in enclosure 7. The meeting adjourned at 11:30 a.m.

BRAIDWOOD STATION

BCAP STATUS MEETING

SEPTEMBER 6, 1984

- |      |  |                  |
|------|--|------------------|
| I.   | INTRODUCTION   | TOM MAIMAN       |
| II.  | BCAP STATUS OVERVIEW                                 | MIKE WALLACE     |
| III. | BCAP PROGRESS REPORT                                 | NINU KAUSHAL     |
| IV.  | QUALITY ASSURANCE PROGRESS REPORT                    | GENE FITZPATRICK |
| V.   | INDEPENDENT EXPERT OVERVIEW GROUP<br>PROGRESS REPORT | JOHN HANSEL      |

BCAP SCOPE

A PROGRAM OF INSPECTIONS AND REVIEWS UNDERTAKEN AS A PRUDENT MEASURE TO ANSWER ANY LEGITIMATE QUESTIONS CONCERNING THE QUALITY OF CONSTRUCTION.

PROGRAM CHRONOLOGY

PROGRAM DEVELOPMENT BEGAN	FEBRUARY, 1984
INDEPENDENT EXPERT OVERVIEW GROUP RETAINED	MARCH 19, 1984
PROGRAM PRESENTED TO NRC AT PUBLIC MEETING	JUNE 8, 1984
BCAP TASK FORCE FORMATION BEGAN	JUNE 11, 1984
PROGRAM DOCUMENT SUBMITTED TO NRC	JUNE 22, 1984
NRC COMMENTS ON PROGRAM DOCUMENT	JULY 27, 1984
CECO RESPONSE TO NRC COMMENTS	AUGUST 30, 1984
FIRST MONTHLY STATUS MEETING	SEPTEMBER 6, 1984

## OBJECTIVES OF BCAP

### TO ASSURE THAT:

- NO PROGRAMMATIC DESIGN-SIGNIFICANT PROBLEMS IN CONSTRUCTION, WHICH HAVE NOT BEEN IDENTIFIED AND ADDRESSED
- ON-SITE CONTRACTORS' PROCEDURES GOVERNING ONGOING SAFETY-RELATED CONSTRUCTION AND QUALITY ASSURANCE ACTIVITIES ADDRESS ALL APPLICABLE DESIGN AND REGULATORY REQUIREMENTS
- WHERE PAST CONSTRUCTION PROBLEMS HAVE BEEN IDENTIFIED WHICH RESULTED IN SIGNIFICANT CORRECTIVE ACTIONS, SUCH CORRECTIVE ACTIONS HAVE BEEN ADEQUATELY IMPLEMENTED AND DOCUMENTED.

## PROGRAM ELEMENTS

- CSR - CONSTRUCTION SAMPLE REINSPECTION
- RPSR - REVERIFICATION OF PROCEDURES TO SPECIFICATION REQUIREMENTS
- RSCAP - REVIEW OF SIGNIFICANT CORRECTIVE ACTION PROGRAMS



BASIS FOR CONFIDENCE IN QUALITY OF CONSTRUCTION

BASED ON REGULATORY REQUIREMENTS

- CONTRACTOR QUALITY ASSURANCE/QUALITY CONTROL PROGRAMS, AUDITS, AND INSPECTIONS
  - ASSURE QUALITY IN DESIGN, PROCUREMENT, AND CONSTRUCTION
  - INSPECTIONS BY INDEPENDENT TESTING AGENCY
- EDISON QUALITY ASSURANCE PROGRAM AUDITS AND SURVEILLANCES
  - OVERVIEW OF CONTRACTOR QUALITY ASSURANCE/QUALITY CONTROL PROGRAMS
- EDISON QUALITY ASSURANCE OVERINSPECTIONS
  - A SECOND LEVEL OF INSPECTION FOR ADDED CONFIDENCE THAT WORK WAS PERFORMED PROPERLY
- CORRECTIVE ACTION PROGRAMS/REINSPECTIONS
  - IDENTIFIED CONSTRUCTION DEFICIENCIES HAVE BEEN CORRECTED, AND, WHERE NECESSARY, REINSPECTIONS HAVE BEEN PERFORMED

OTHER MEASURES TO ENSURE THAT SIGNIFICANT DISCREPANCIES ARE IDENTIFIED AND ADDRESSED

° INPO

- DESIGN AND CONSTRUCTION EVALUATION PERFORMED TO ASSIST IN ACHIEVING HIGHEST STANDARDS OF EXCELLENCE IN ACHIEVING

° MANAGEMENT REVIEW

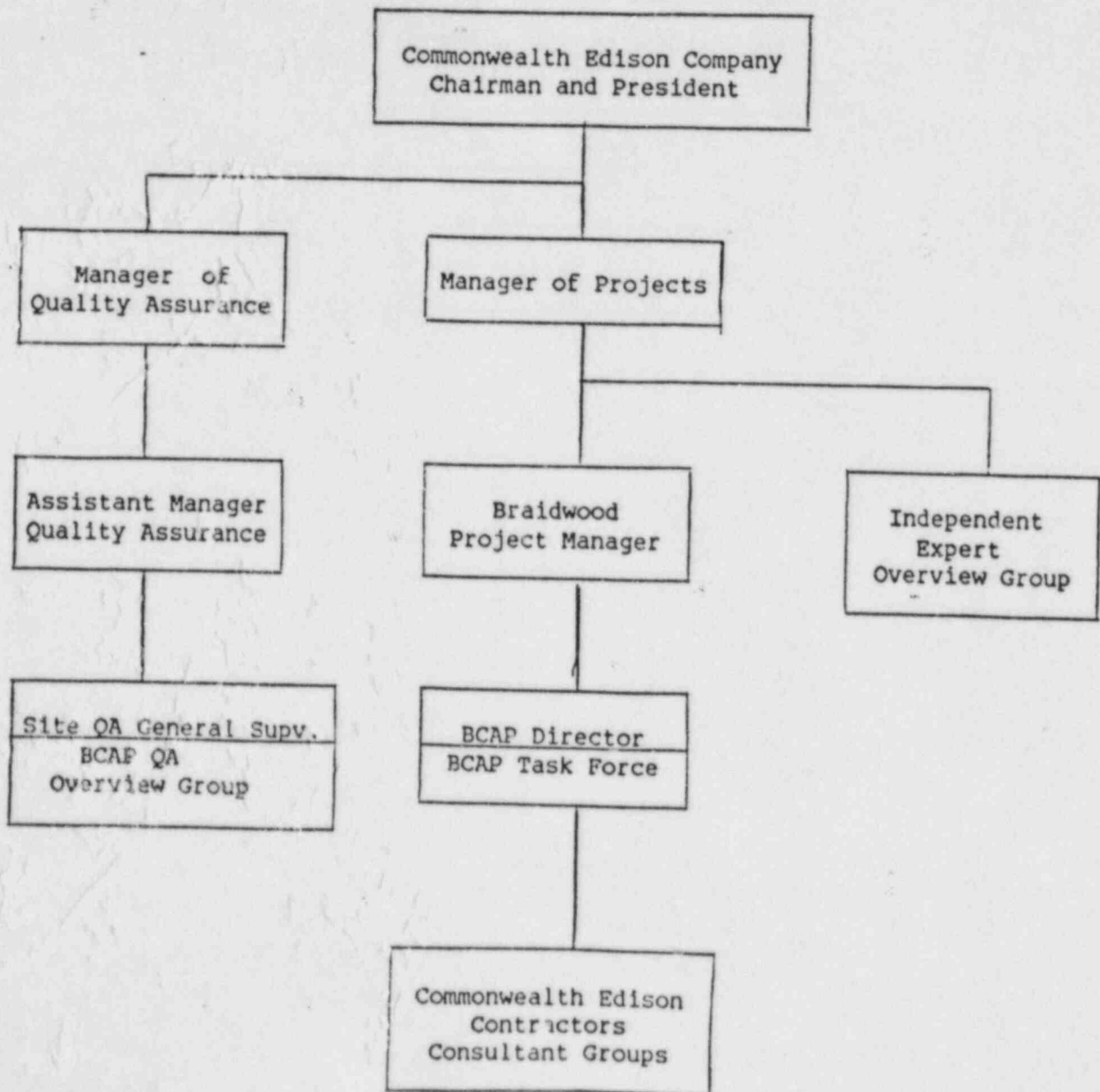
- REVIEWS OF SPECIFIC PROJECT AREAS AS WELL AS BROAD SCOPE OF ACTIVITIES, BY EXPERIENCED INDIVIDUALS, TO IDENTIFY AREAS OF IMPROVEMENT

° BCAP

- A BROAD BASED PROGRAM OF INSPECTIONS AND REVIEWS

FIGURE 1

BCAP ORGANIZATIONAL CHART



APPROACH TO ENSURE QUALITY OF BCAP EFFORT

- BCAP TASK FORCE STAFFING
  - STONE & WEBSTER AND DANIEL CONSTRUCTION COMPRISE MAJORITY OF TASK FORCE
  - ALL PERSONNEL DEDICATED TOTALLY TO BCAP
- BCAP DIRECTOR ON EQUAL LEVEL WITH CONSTRUCTION, STARTUP, OPERATING, LICENSING AND COMPLIANCE
- BCAP HIGHLY STRUCTURED WITH DETAILED PLANS, PROCEDURES, CHECKLISTS AND INSTRUCTIONS.
- OVERVIEWED BY SEPARATE SITE QUALITY ASSURANCE GROUP
- OVERVIEWED BY INDEPENDENT EXPERT OVERVIEW GROUP REPORTING TO MANAGER OF PROJECTS, UNDER PROTOCOL
- OPEN MONTHLY NRC STAFF BRIEFING
- NRC INVOLVEMENT

### BCAP SUMMARY STATUS

- PLANNING COMPLETE AND ORGANIZATION IN PLACE
- PLANS AND PROCEDURES FOR BCAP WORK ESSENTIALLY COMPLETED
- PREPARATION OF INSTRUCTIONS AND CHECKLISTS IN PROGRESS
- RSCAP REVIEW IN PROGRESS
- TRAINING AND CERTIFICATION OF INSPECTORS ESSENTIALLY COMPLETE
- INSPECTIONS (CSR) EXPECTED TO START NEXT WEEK

PRESENTATION OUTLINE

ESTABLISHMENT OF THE BCAP EFFORT

OVERALL WORK PLAN

BCAP PROGRESS

CSR

RPSR

RSCAP

BCAP ORGANIZATION

PLANNED MANPOWER

MANPOWER STATUS

SUMMARY STATUS

ESTABLISHMENT OF THE BCAP EFFORT

- BCAP MOBILIZED ON JUNE 8, 1984
- ON JUNE 11, 1984, TEAM OF 12 STARTED WORK.
- BY END OF JUNE, ORGANIZATION ESTABLISHED AND OVERALL WORK PLAN DEVELOPED.

## OVERALL WORK PLAN

- BCAP DOCUMENT IS THE PROGRAM BASIS.
- DEVELOP FOUR SUBTIER PLANS.
  - 1 OVERVIEW PLAN
  - 3 ELEMENT PLANS (ONE PER ELEMENT)
- IDENTIFY INITIAL LIST OF PROCEDURES.
- WRITE PLANS AND PROCEDURES.
- WALK THROUGH THE PROCEDURES.
- INCORPORATE FEEDBACK FROM THE WALK-THROUGHS.
- PREPARE CHECKLISTS AND INSTRUCTIONS.
- TRAIN AND CERTIFY INSPECTORS
- CARRY OUT THE WORK.



CSR - CONSTRUCTION SAMPLE REINSPECTION

OBJECTIVE:

REINSPECT A SUFFICIENT SAMPLE OF COMPLETED SAFETY-RELATED CONSTRUCTION ACTIVITIES TO VERIFY CONFORMANCE TO DESIGN.

ADDITIONALLY, THE DOCUMENTATION FOR THE SAMPLE REINSPECTED WILL BE REVIEWED TO ASSURE THAT IT IS COMPLETE AND ACCURATE.

## CSR ACTIVITIES

THESE ARE:

- DEFINE CONSTRUCTION CATEGORIES
- ESTABLISH POPULATIONS
- PREPARE CHECKLISTS
  - FOR HARDWARE INSPECTIONS
  - FOR DOCUMENTATION REVIEWS
- SELECT SAMPLE
- PREPARE VERIFICATION PACKAGE
- PERFORM INSPECTIONS AND REVIEWS
- PROCESS DISCREPANCIES
- ANALYZE/EVALUATE RESULTS

## CSR PROGRESS

- OVERALL PLAN PREPARED AND APPROVED
- 5 OUT OF 6 PROCEDURES COMPLETED
- ALL (36) CONSTRUCTION CATEGORIES IDENTIFIED
- 4 CHECKLISTS COMPLETED, 8 IN PROGRESS (36 REQUIRED)
- SAMPLE DEFINITION SELECTION IN PROGRESS.
- INSPECTION PACKAGE PREPARATION IN PROGRESS,
- TRAINING AND CERTIFICATION OF INSPECTORS IN PROGRESS

RPSR - REVIEW OF PROCEDURES TO SPECIFICATION REQUIREMENTS

OBJECTIVE:

TO ASSURE THAT ON-SITE CONTRACTORS' PROCEDURES GOVERNING ON-GOING AND FUTURE SAFETY-RELATED CONSTRUCTION AND INSPECTION ACTIVITIES ADDRESS ALL APPLICABLE DESIGN AND REGULATORY REQUIREMENTS.

RPSR ACTIVITIES

- DETERMINE DESIGN AND REGULATORY REQUIREMENTS
- IDENTIFY APPLICABLE CONTRACTOR PROCEDURES
- COMPARE DESIGN AND REGULATORY REQUIREMENTS TO PROCEDURAL CONTENT
- DOCUMENT AND RESOLVE DIFFERENCES

## RPSR PROGRESS

- OVERALL PLAN PREPARED AND APPROVED
- RPSR PROCEDURES COMPLETED AND APPROVED
- APPLICABLE S & L SPECIFICATIONS AND CONTRACTOR PROCEDURES IDENTIFIED
- PREPARATORY WORK FOR COMPLETION OF CHECKLISTS FOR PROCEDURE REVIEW IN PROGRESS
- PLANNING FOR REVIEW AGAINST FSAR CONSTRUCTION COMMITMENTS IN PROGRESS

REVIEW OF SIGNIFICANT CORRECTIVE ACTION PROGRAMS (RSCAP)

OBJECTIVE: TO DETERMINE THAT "WHERE PAST  
CONSTRUCTION PROBLEMS HAVE BEEN  
IDENTIFIED WHICH RESULTED IN  
SIGNIFICANT CORRECTIVE ACTIONS,  
SUCH CORRECTIVE ACTIONS HAVE BEEN  
ADEQUATELY IMPLEMENTED AND DOCUMENTED"

RSCAP SCOPE

SIGNIFICANT CORRECTIVE ACTION PROGRAMS INCLUDED UNDER RSCAP ARE:

- A. REINSPECTION OF SAFETY-RELATED MECHANICAL EQUIPMENT
- B. QUALITY CONTROL REINSPECTION
- C. PIPING HEAT NUMBER TRACEABILITY
- D. QUALITY CONTROL STRUCTURAL STEEL REVIEW (QCSSR)
- E. ELECTRICAL INSTALLATION DOCUMENT REVIEW
- F. SAFETY-RELATED PIPE SUPPORTS
- G. HVAC WELDING
- H. HVAC CONFIGURATION
- I. HVAC DUCT STIFFENER AND FITTING DETAIL
- J. INSTRUMENTATION INSTALLATION VERIFICATION
- K. NSSS COMPONENT SUPPORT VERIFICATION



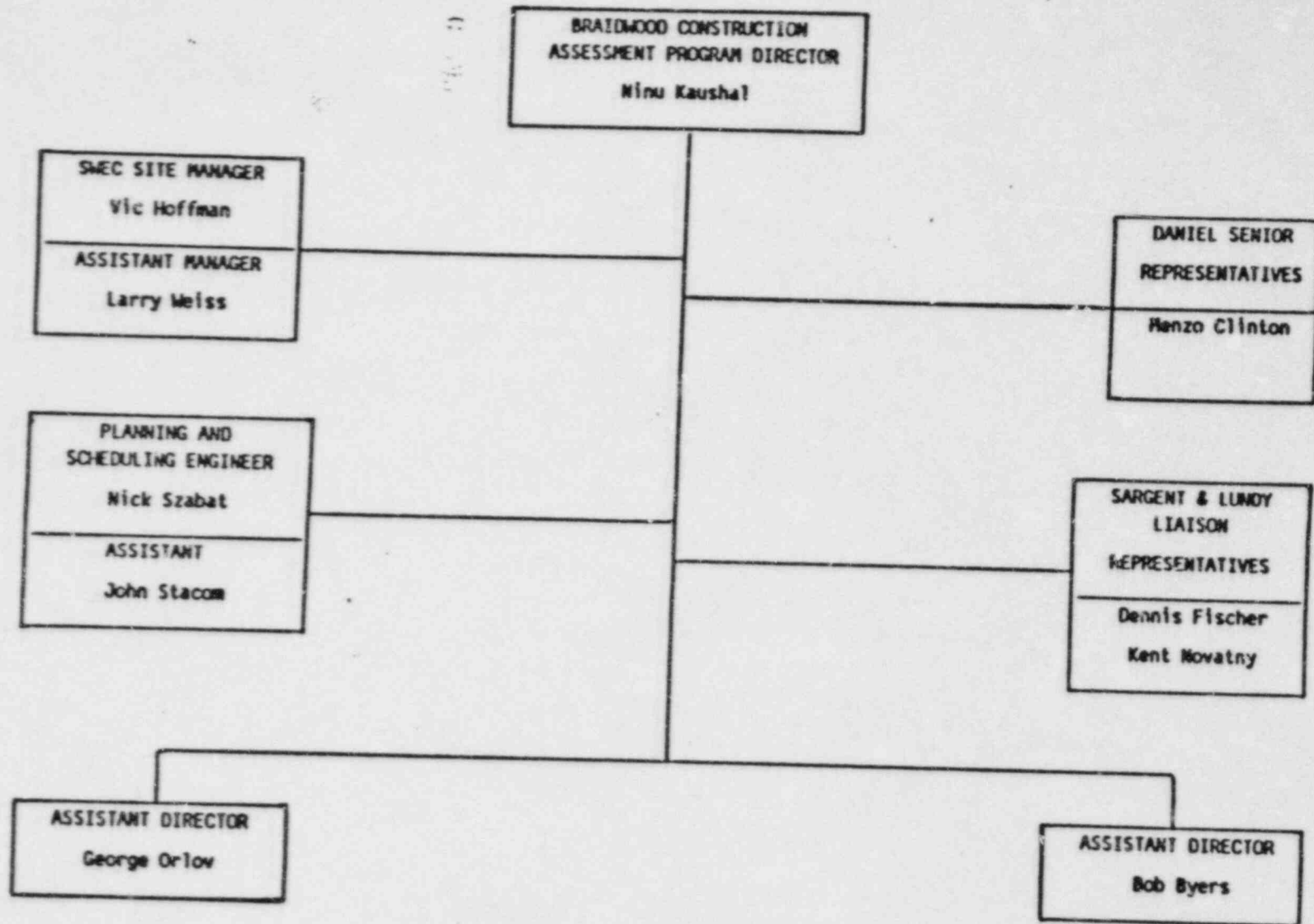
## RSCAP PROGRESS

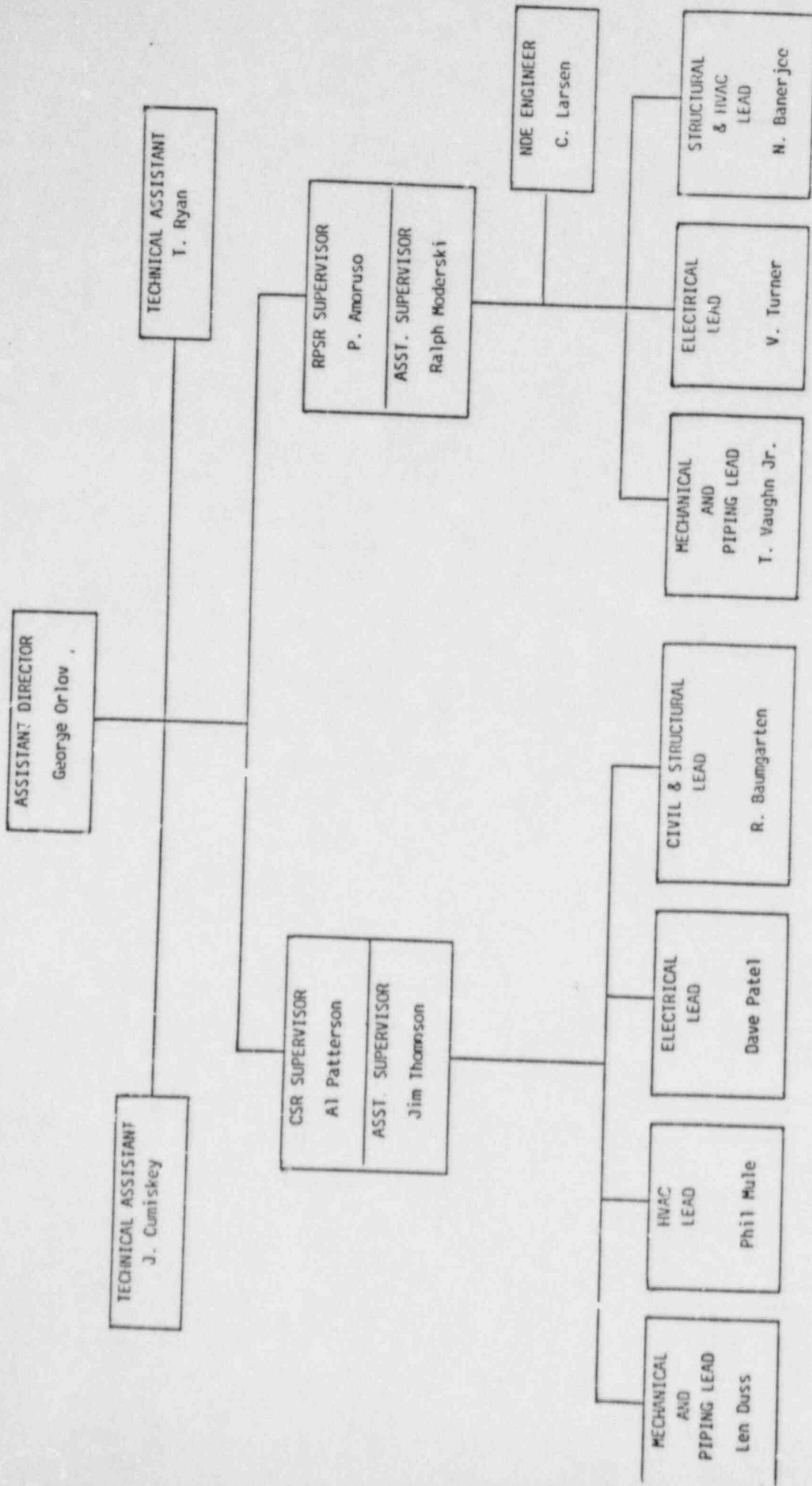
- OVERALL PLAN PREPARED AND APPROVED
- DETAILED IMPLEMENTING PROCEDURE  
PREPARED, APPROVED
- WALKTHROUGH OF THE PROCEDURE COMPLETED &  
FEEDBACK FROM WALKTHROUGH INCORPORATED
- REVIEW INITIATED ON 5 OF THE 11 CAP'S
- IN PROGRESS  
- MINOR REVISIONS TO PLAN & PROCEDURE

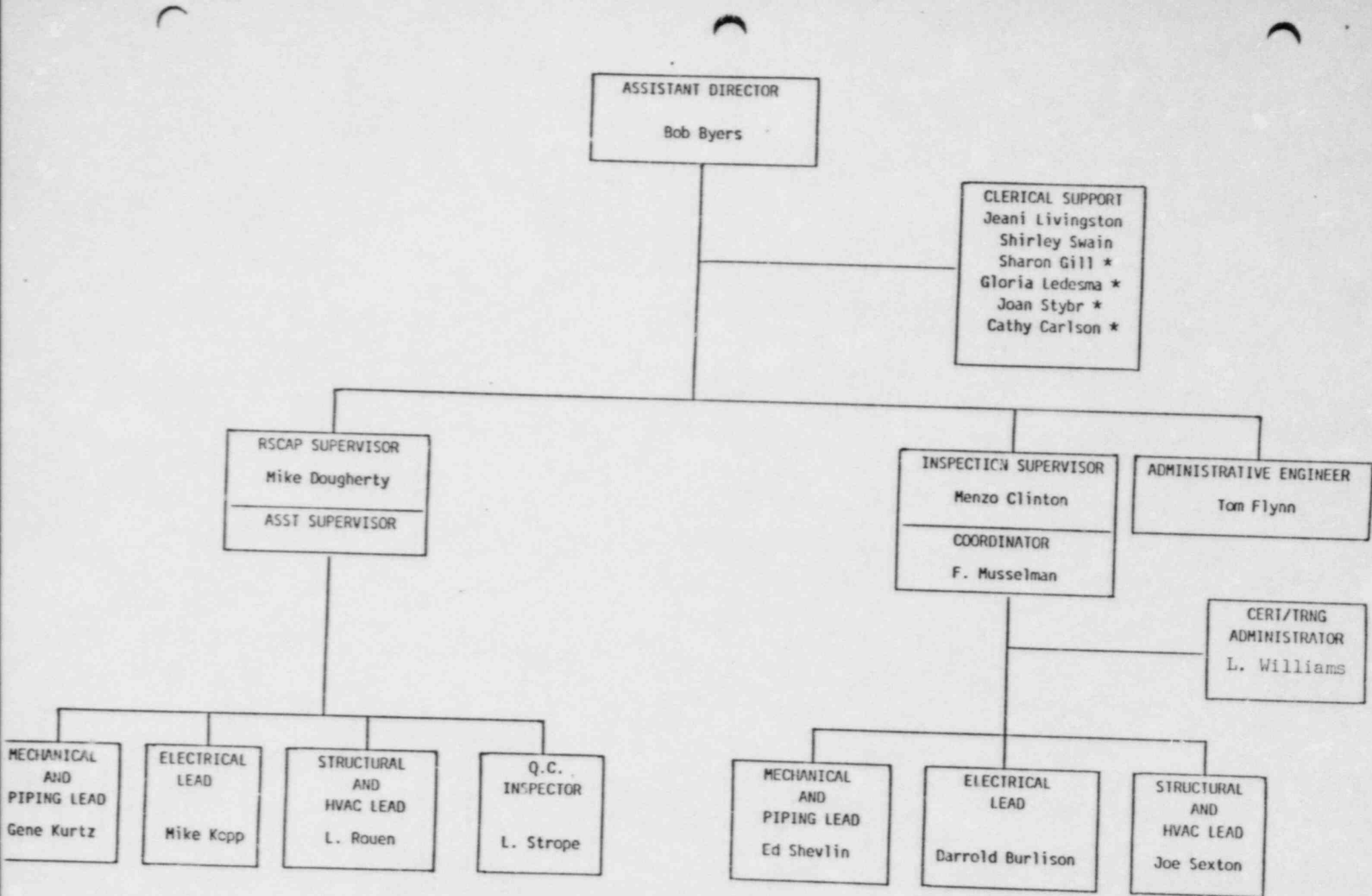
BCAP - OVERALL PROGRESS

- OVERVIEW PLAN AND PLANS FOR EACH ELEMENT PREPARED AND APPROVED.
- 16 OUT OF 17 PROCEDURES COMPLETED AND APPROVED. DRAFT OF REMAINING ONE COMPLETED. SOME REVISIONS BASED ON IEOG COMMENTS IN PROGRESS.
- TRAINING AND CERTIFICATION OF INSPECTORS ALMOST COMPLETE.
- PREPARATORY WORK FOR COMPLETION OF INSPECTION PACKAGES (CSR) AND PROCEDURE REVIEW (RPSR) IS PROCEEDING.
- DETAILED PLANNING IN PROGRESS.

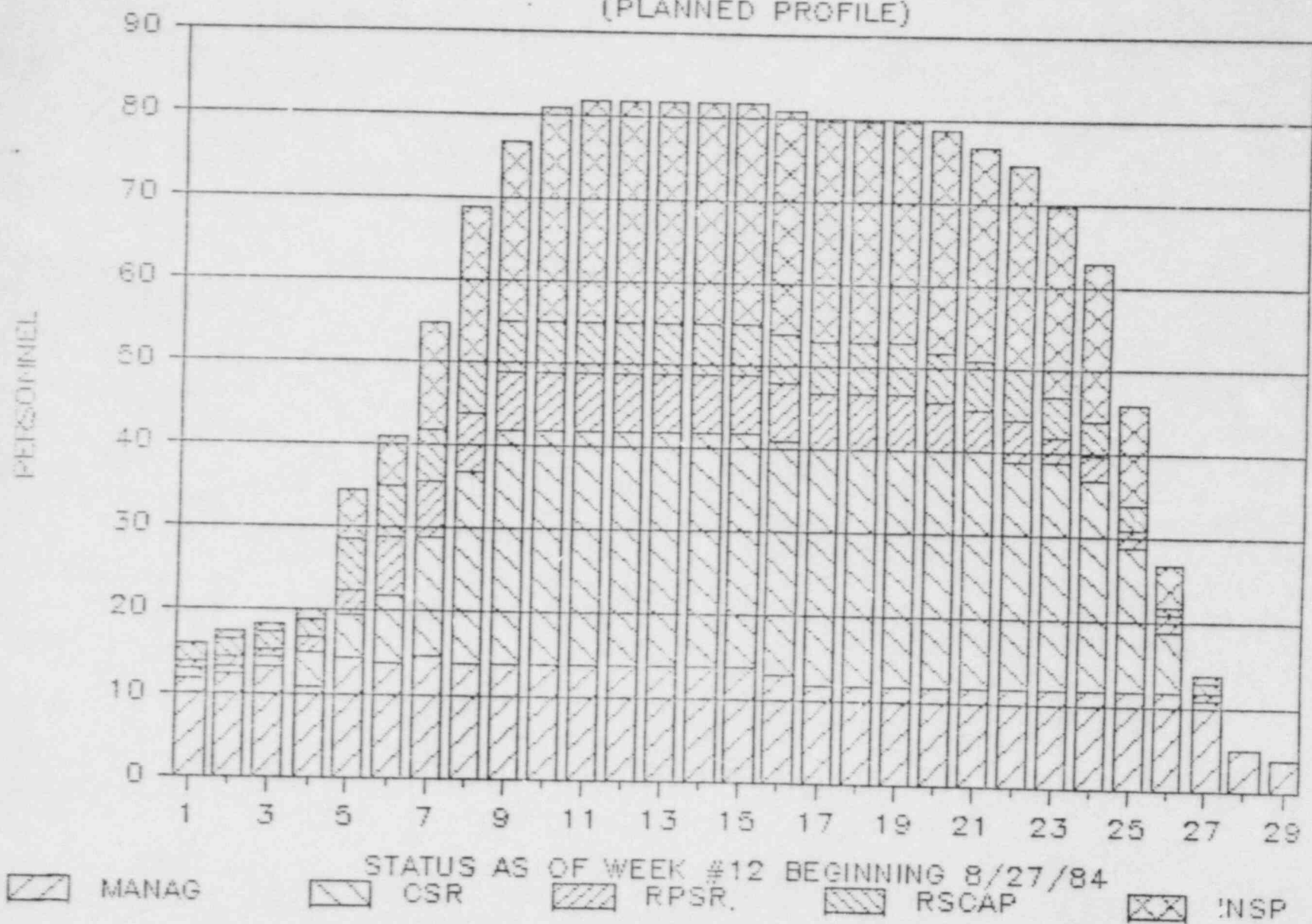
BCAP ORGANIZATION



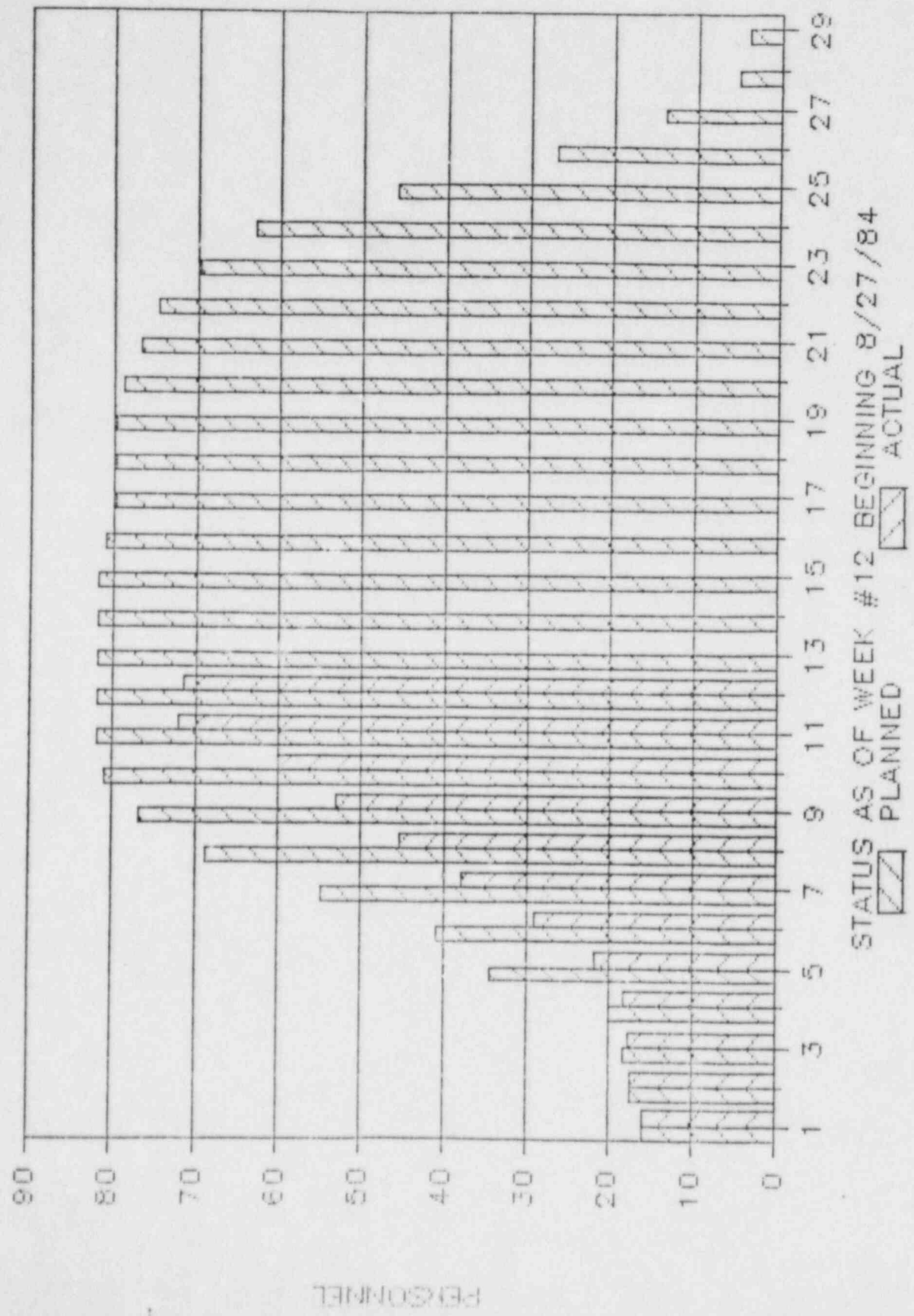




# TOTAL BCAP MANPOWER (PLANNED PROFILE)



# TOTAL BCAP MANPOWER





BCAP SUMMARY STATUS

- PLANNING COMPLETE AND ORGANIZATION IN PLACE
- PLANS AND PROCEDURES FOR BCAP WORK ESSENTIALLY COMPLETED
- PREPARATION OF INSTRUCTIONS AND CHECKLISTS IN PROGRESS
- RSCAP REVIEW IN PROGRESS
- TRAINING AND CERTIFICATION OF INSPECTORS ESSENTIALLY COMPLETE
- INSPECTIONS (CSR) EXPECTED TO START NEXT WEEK

AUDIT AND SURVEILLANCE  
SCHEDULE

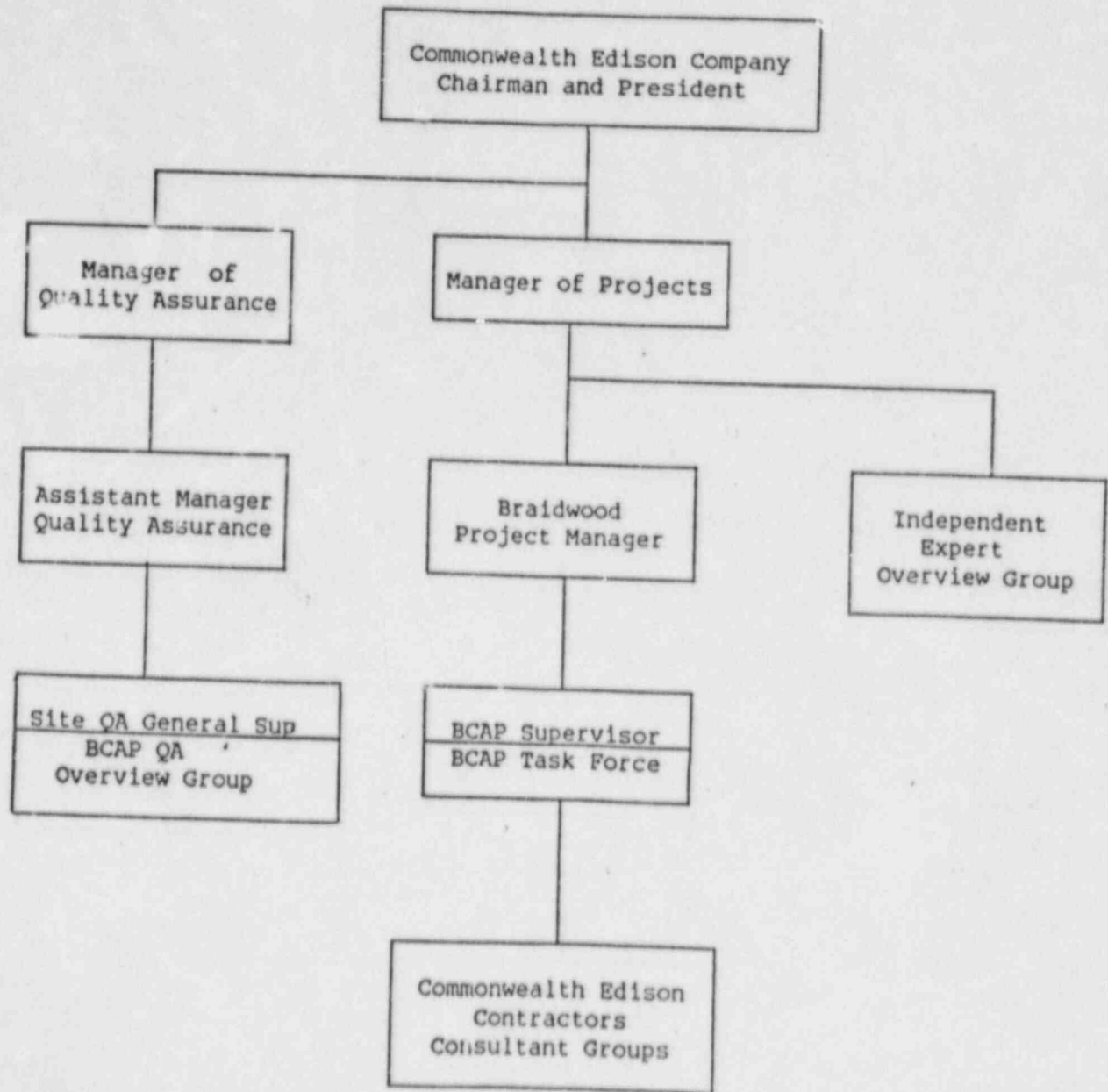
ELEMENT PROCEDURE(S)		WEEK OF SEPT. 17	WEEK OF SEPT. 24	WEEK OF OCT. 1	WEEK OF OCT. 8
CSR	5	AUDIT 2 AREAS	AUDIT 1 AREA  SURVEILLANCE 3 AREAS	AUDIT 1 AREA  SURVEILLANCE 4 AREAS	AUDIT 1 AREA  SURVEILLANCE 4 AREAS
RPSR	3		AUDIT 3 AREAS	SURVEILLANCE 3 AREAS	SURVEILLANCE 3 AREAS
RSCAP	1		AUDIT 1 AREA	SURVEILLANCE 1 AREA	SURVEILLANCE 1 AREA
ADMIN.	7	AUDIT 7 AREAS			

BCAP Q.A. TOPICS

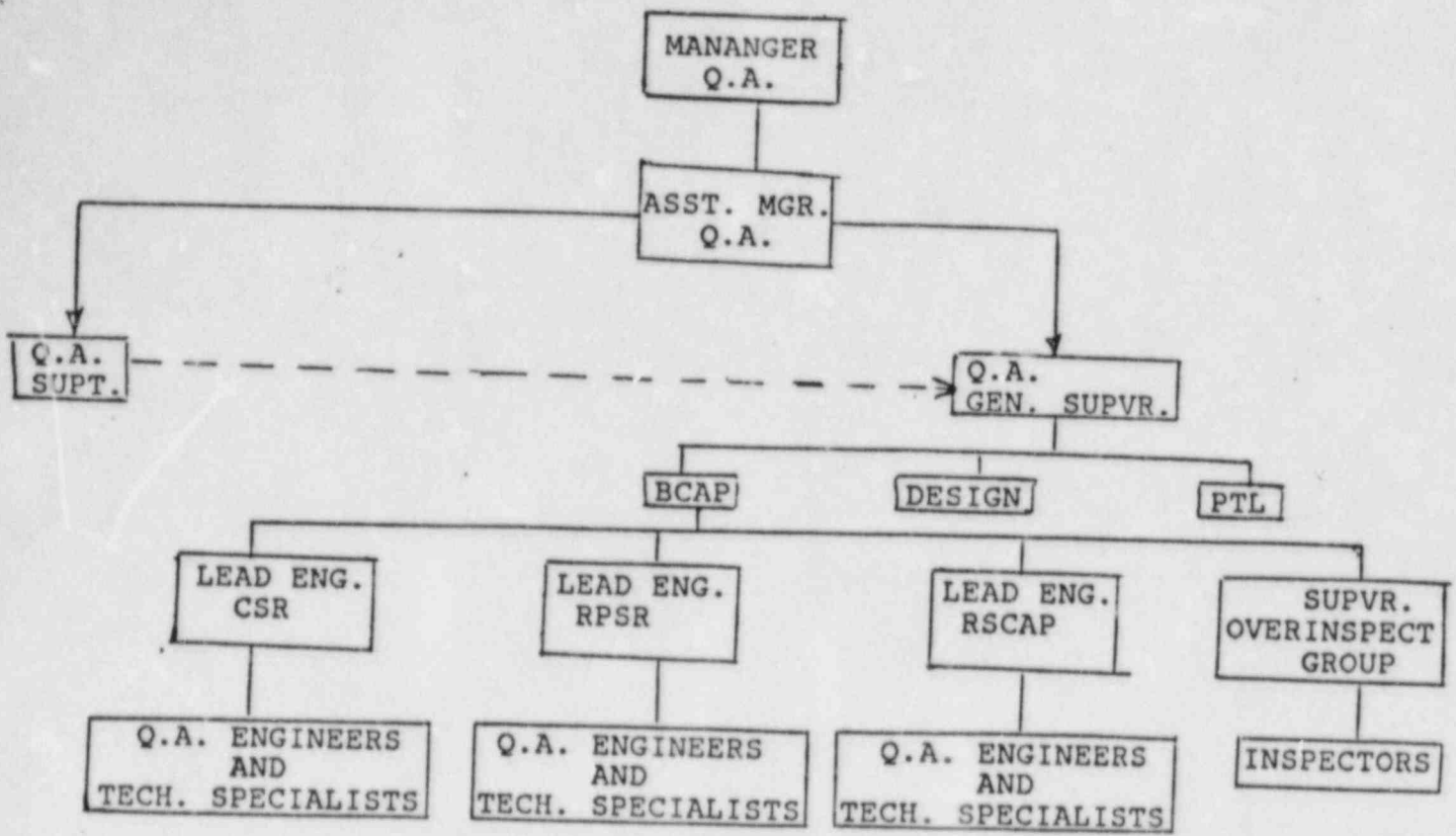
- ORGANIZATION
  
- PERSONNEL
  
- DEVELOPMENT EFFORTS
  
- REVIEW EFFORTS
  
- AUDITS/SURVEILLANCES

FIGURE 1

BCAP ORGANIZATIONAL CHART



(0705d)



BCAP Q.A.  
PERSONNEL

<u>POSITIONS</u>	<u>CURRENT</u>	<u>EST PEAK</u>
SUPERVISOR, ENGINEERS, SPECIALISTS	7	8
OVERINSPECTION GROUP	9	10
SUPPORT	<u>3</u>	<u>3</u>
TOTAL	19	21

PERSONNEL  
EXPERIENCE LEVELS  
(AVERAGE YEARS)

	OVERALL	NUCLEAR	Q.A.
GENERAL SUPERVISOR - Q.A. LEAD ELEMENT ENGINEERS OVERINSPECTION SUPERVISOR Q.A. ENGINEERS/TECH. SPECIALISTS	21.9	13.4	3.9
INSPECTORS	14	7.4	--

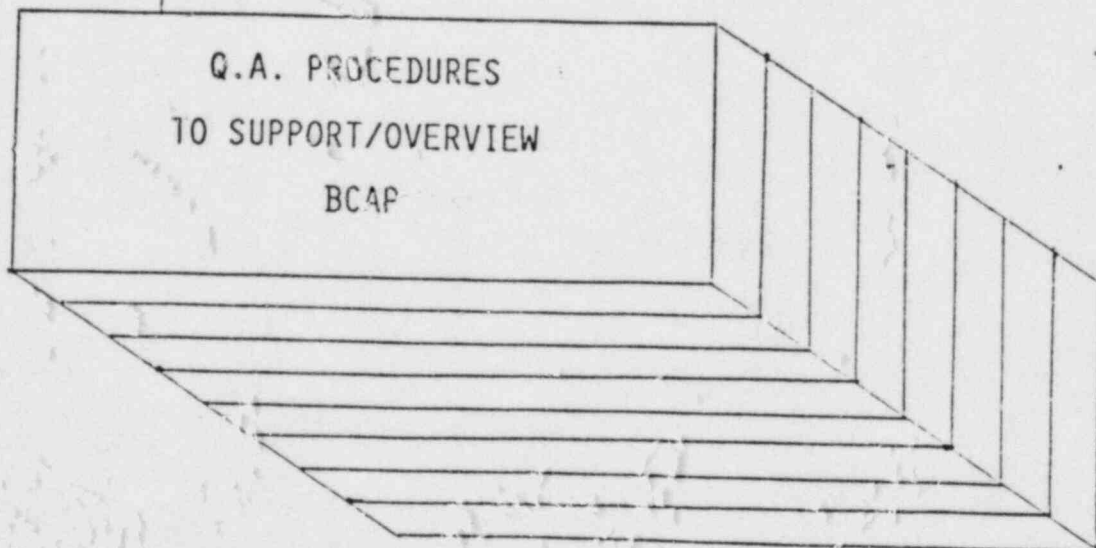
QUALITY ASSURANCE - BCAP OVERVIEW

BCAP  
PROGRAM DOCUMENT

Q.A. PLAN  
FOR BCAP

- WHO ● HOW ● WHY
- WHAT ● WHERE ● WHEN

Q.A. PROCEDURES  
TO SUPPORT/OVERVIEW  
BCAP





DEVELOPMENT RESULTS

- BCAP Q.A. PLAN APPROVED JULY 16, 1984
- 12 Q.A. SPECIAL INSTRUCTIONS ISSUED AUGUST 7, 1984
  - 3 Q.A. SPECIAL INSTRUCTIONS IN PROGRESS

BCAP DOCUMENT REVIEWS

REVIEWED AND CONCURRED IN:

4 BCAP TASK FORCE PLANS

16 BCAP TASK FORCE PROCEDURES

AUDIT/SURVEILLANCE APPROACH

● MATRIX OF REQUIREMENTS

● SCHEDULE

BCAP COMMITMENT MATRIX

Item	Commitment	June 84		Plans				Procedures	
		Prog. Doc.	QA	Overview	CSR	RPSR	RSCAP	BCAP	QASI
102	Control documents will identify what is to be inspected or reviewed specify how the inspection or review is to be conducted and identify the inspection acceptance criteria and requisite quality documentation.	IV-1	II (Pg. 6) II (Pg. 9)		3 of 12 Para. 2 & 4	II (Pg. 3)	IIE (Pg. 4)	22-3.5 4.4.2	07 15
103	BCAP activities will be controlled through the use of written procedures, intro checklists approved by the BCAP Director with QA concurrence.	IV-1	II (Pg. 5) II (pg. 8) II (pg. 9) II (pg. 6)	2.8 2.0 4.	3 of 12		IIC (Pg. 3)	22-3.5 24-3.3	06
104	Persons performing BCAP inspection criteries will be trained, qualified and certified IAW ANSI N45.2.6 (1978) Reg. Guide 1.58.	IV-1	II (Pg. 9) E5-1 II (Pg. 8)		7 of 12			08 24-3.3	04

AUDIT AND SURVEILLANCE  
SCHEDULE

ELEMENT	PROCEDURE(S)	WEEK OF SEPT. 17	WEEK OF SEPT. 24	WEEK OF OCT. 1	WEEK OF OCT. 8
CSR	5	AUDIT 2 AREAS	AUDIT 1 AREA  SURVEILLANCE 3 AREAS	AUDIT 1 AREA  SURVEILLANCE 4 AREAS	AUDIT 1 AREA  SURVEILLANCE 4 AREAS
RPSR	3		AUDIT 3 AREAS	SURVEILLANCE 3 AREAS	SURVEILLANCE 3 AREAS
RSCAP	1		AUDIT 1 AREA	SURVEILLANCE 1 AREA	SURVEILLANCE 1 AREA
ADMIN.	7	AUDIT 7 AREAS			

**INDEPENDENT  
OVERVIEW  
GROUP**

**PUBLIC MEETING #1  
9/6/84**

ENCLOSURE 5

## CHARTER

SERVE AS AN INDEPENDENT EXPERT OVERVIEW GROUP TO ASSURE THAT THE BCAP MEETS ITS OBJECTIVES BY:

- REVIEWING ALL ELEMENTS OF THE PROGRAM
- REVIEWING ALL PROCEDURES AND IMPLEMENTING INSTRUCTION
- REVIEWING THE BCAP QUALITY ASSURANCE/CONTROL PROGRAM
- CONDUCT OF AUDITS
- INSPECTIONS
- MONITORING THE PROGRESS OF ALL SUPPORT PERSONNEL
- REVIEWING THE RESULTS OF EACH ELEMENT OF THE PROGRAM ON AN ON-GOING BASIS

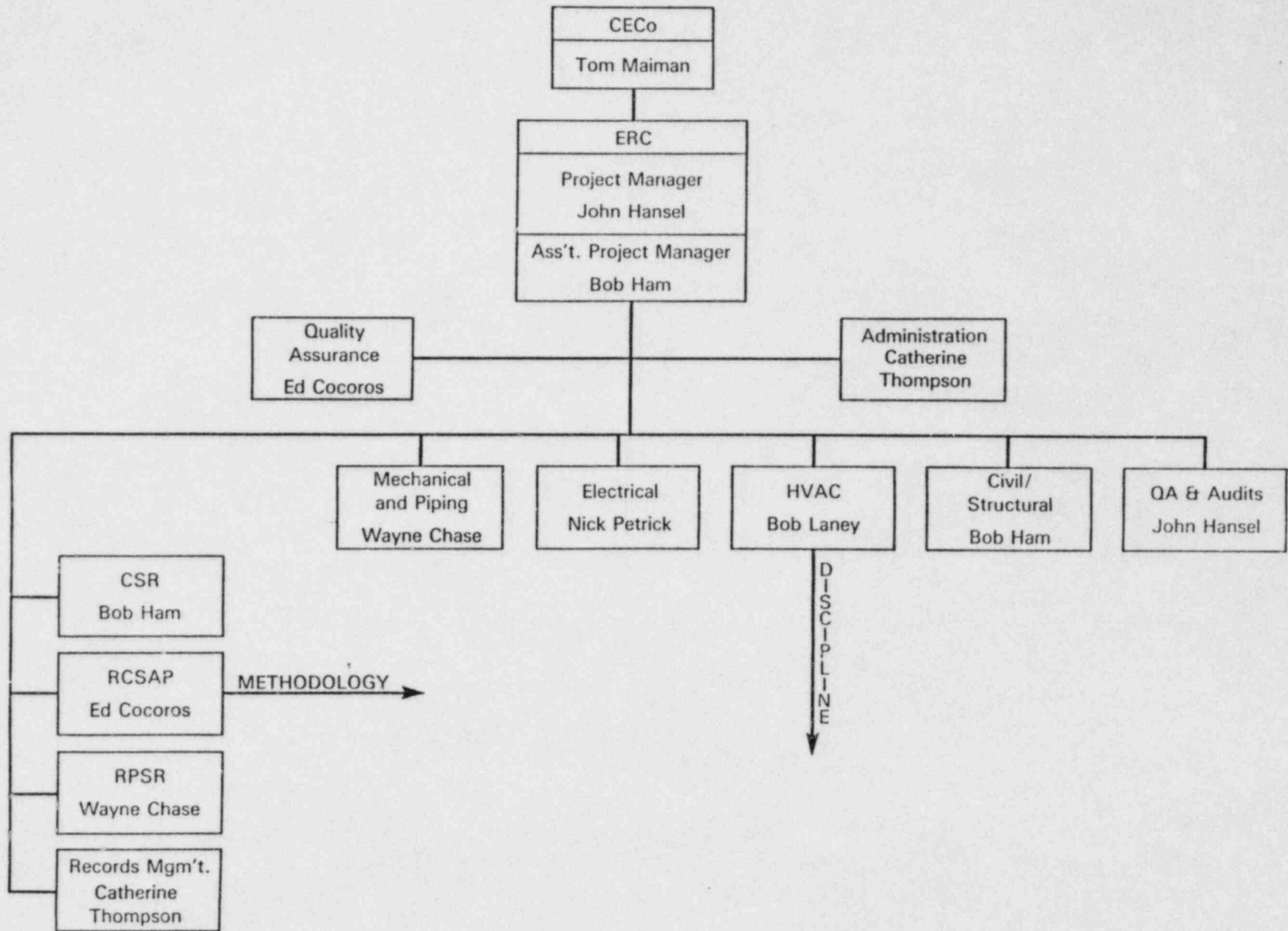
# PROTOCOL

## COMMUNICATIONS/METHOD OF OPERATION

- CORRESPONDENCE WILL BE PROVIDED TO EDISON AND NRC SIMULTANEOUSLY
  - GENERAL CORRESPONDENCE
  - MONTHLY REPORTS
  - INTERIM & FINAL AUDIT REPORTS
  - FINAL PROGRAM REPORT
  - OBSERVATIONS & FINDINGS
- ERC ASSURED PROMPT ACCESS TO INFORMATION AND ACTIVITIES REQUIRED TO FULFILL OUR ROLE
- ERC WILL KEEP RECORDS OF ALL MEETINGS WITH EDISON INCLUDING A STATEMENT OF PURPOSE
  - THESE RECORDS ARE AVAILABLE FOR NRC REVIEW
- MONTHLY MEETINGS WITH EDISON AND NRC
  - OPEN TO THE PUBLIC
  - MINUTES WILL BE PUBLISHED



# EVALUATION RESEARCH CORPORATION



## REVIEWS

ERC WILL CONDUCT A REVIEW OF ALL PLANS, PROCEDURES, CHECKLISTS, AND ANY OTHER DOCUMENTS GENERATED TO DEFINE ACTIVITY FOR BCAP. COMMENTS WILL BE CATEGORIZED SUCH THAT VISIBILITY IS PLACED ON THOSE COMMENTS JUDGED TO BE CRITICAL FOR A SUCCESSFUL PROGRAM.

## AUDITS

RIGOROUS AUDITS WILL BE PERFORMED IN EACH OF FIVE AREAS TO ASSESS THE IMPLEMENTATION OF BCAP. THE FIVE AREAS ARE:

- ADMINISTRATIVE
- QUALITY ASSURANCE
- CSR
- RPSR
- RSCAP

THESE AUDITS WILL BE DEVELOPED, CONDUCTED, AND REPORTED BACK TO CEC<sub>o</sub> USING STANDARD AUDITING TECHNIQUES IN ACCORDANCE WITH ANSI 45.2.23. EACH AUDIT WILL BE LED BY A CERTIFIED LEAD AUDITOR.

## **SURVEILLANCES**

**PROGRAMMATIC SURVEILLANCES WILL BE CONDUCTED TO ENSURE THAT THE DEFINED PROGRAM IS ADEQUATE AND BEING IMPLEMENTED CORRECTLY. TECHNICAL SURVEILLANCES WILL BE CONDUCTED TO ASSESS THE CORRECTNESS OF THE TECHNICAL APPROACH IN EACH OF THE FOUR TECHNICAL DISCIPLINES, E.G., HVAC, ELECTRICAL, MECHANICAL/PIPING, AND CIVIL/STRUCTURAL.**

## INSPECTIONS

REINSPECTIONS WILL BE OVERVIEWED BY THE ERC PERSONNEL RESPONSIBLE FOR THE PARTICULAR ELEMENT CATEGORY WITH WHICH THE REINSPECTION IS ASSOCIATED, E.G., CSR, RSCAP, RPSR. MOST REINSPECTIONS WILL BE PERFORMED IN THE CSR ELEMENT. IN ADDITION TO THE REINSPECTION AUDITS, SAMPLE REINSPECTIONS ARE ANTICIPATED AS INDEPENDENT VERIFICATION.

## ONGOING OVERVIEWS

IN ADDITION TO THE SPECIFICALLY LISTED METHODS OF OVERVIEWING BCAP, ERC WILL CONTINUALLY MONITOR BCAP SCHEDULES AND PROGRESS OF THE PROGRAM. THE MONITORING WILL INCLUDE INTERVIEWS WITH BCAP PERSONNEL PERFORMING ACTIVITIES IN ACCORDANCE WITH BCAP PROCEDURES. EACH ERC MEMBER WILL HAVE HIS/HER OWN PERSONAL LOG BOOK TO DOCUMENT EACH DAY'S ACTIVITIES FOR RECORD PURPOSES. COPIES OF THESE DAILY SHEETS WILL BE FILED IN THE ERC FILE ON-SITE AND IN THE OAK RIDGE OFFICE.

## **OBSERVATIONS**

**IN ADDITION TO DOCUMENTING AUDIT FINDINGS, ERC WILL DOCUMENT ALL OBSERVATIONS THAT REQUIRE FURTHER EVALUATION TO DETERMINE ACCEPTABILITY OF THE NOTED PRACTICE. THESE OBSERVATIONS WILL BE SERIALIZED AND SUBMITTED TO CEC<sub>0</sub> FOR RESPONSE. SATISFACTORY RESPONSES WILL RESULT IN A CLOSING OF THE OBSERVATION. UNSATISFACTORY RESPONSES WILL RESULT IN AN ESCALATION OF THE OBSERVATION TO A REQUEST FOR CORRECTIVE ACTION (RCA). THIS RCA WILL ALSO RECEIVE A UNIQUE SERIALIZATION AND BE SUBMITTED TO THE BCAP DIRECTOR FOR RESOLUTION.**

## BCAP REVIEW SUMMARY

WEEK OF	SUMMARY
JUNE 11	BCAP POLICY DOCUMENT (LEVEL 1)
JULY 9	a) BCAP OVERVIEW DOCUMENT (LEVEL 2) b) CSR PLAN (LEVEL 3) c) RPSR PLAN (LEVEL 3) d) RSCAP PLAN (LEVEL 3) e) BCAP QA PLAN (PRELIMINARY)
JULY 23	a) PRELIMINARY BCAP PROCEDURES (LEVEL 4) b) INTERVIEWS WITH CSR, RPSR, AND RSCAP TEAMS FOR RESULTS OF PROCEDURE WALK-THROUGHS
JULY 30	a) REVIEW PRELIMINARY BCAP PROCEDURES b) REVIEWED FINAL BCAP QA PLAN
AUGUST 6	a) REVIEWED DRAFTS OF BCAP PROCEDURES AND PROVIDED COMMENTS TO CEC <sub>o</sub>



## BCAP REVIEW SUMMARY (CONTINUED)

AUGUST 20

a) REVIEWED FINAL BCAP PROCEDURES:

BCAP-01	BCAP-20
BCAP-02	BCAP-21
BCAP-04	BCAP-22
BCAP-06	BCAP-23
BCAP-07	BCAP-24
BCAP-08	BCAP-60

b) MET WITH BCAP PERSONNEL TO PROVIDE INFORMAL COMMENTS WITH NRC IN ATTENDANCE

AUGUST 27

a) CATEGORIZED COMMENTS ON BCAP PROCEDURES LISTED ABOVE AND PROVIDED FORMAL COMMENTS TO CEC<sub>0</sub>

b) REVIEWED CEC<sub>0</sub> RESPONSE AND AGREED WITH THEIR POSITION SUBJECT TO INCORPORATION AND RETAINING OF PERSONNEL

c) PERFORMED A SURVEILLANCE OF

- 1) RPSR
- 2) BCAP-08 IMPLEMENTATION
- 3) BCAP-01 IMPLEMENTATION

d) REVIEW DRAFT CHECKLISTS FOR CSR:

- 1) CONCRETE PLACEMENT
- 2) SMALL BORE PIPING
- 3) ELECTRICAL CONDUIT
- 4) HVAC DUCT WORK

# OPEN ISSUES/CONCERNS

## RSCAP

- AS CURRENTLY WRITTEN HAS AN OBJECTIVE TO ASSURE THAT PREVIOUS COMMITMENTS HAVE BEEN ADEQUATELY IMPLEMENTED AND DOCUMENTED
- WE RECOMMEND THAT A REVIEW BE CONDUCTED TO DETERMINE IF THESE COMMITMENTS ARE ADEQUATE TO PREVENT RECURRENCE OF THE PROBLEM OR CONCERN

## RPSR

- IS DESIGNED TO ASSURE THAT CONTRACTOR PROCEDURES ADDRESS ALL APPLICABLE DESIGN AND REGULATORY REQUIREMENTS
- RPSR DOES NOT REQUIRE A REVIEW AGAINST FSAR REQUIREMENTS/ COMMITMENTS

## GENERAL

- INCONSISTENCY BETWEEN VARIOUS BCAP DOCUMENTS CONCERNING BASELINE DATES  
— JUNE 1 VS JUNE 30
- DUE TO REVISIONS THERE ARE MINOR INCONSISTENCIES IN BCAP DOCUMENTS  
— A REVIEW NEEDS TO BE CONDUCTED AND CORRECTIONS MADE TO ASSURE CONSISTENCY

NOTE: EACH OF THESE CONCERNS WERE DISCUSSED WITH EDISON ON AUGUST 29, 1984 AND THEY HAVE AGREED TO TAKE APPROPRIATE ACTION.

Enclosure 6

ITEMS DISCUSSED AT NRC/CECo/ERC MEETING  
SEPTEMBER 6, 1984 9:00 A.M.

- Q. Will BCAP address the findings of the recent INPO evaluation?
- A. The BCAP will not explicitly address the INPO findings, in that these findings will be addressed under separately established corrective action programs designed to specifically address the INPO findings. However, the execution of BCAP will not be limited from reviewing areas identified by INPO findings.
- Q. Is BCAP a closed program? Is the scope predetermined or will it be expanded as problems are identified?
- A. The BCAP is a closed program. If problems are identified by the BCAP, specific corrective action programs separate from BCAP will be formulated to address these concerns.
- Q. The BCAP recently stopped work on the RSCAP element of at BCAP. Please give the reasons for the work stoppage.
- A. The IEOG had commented on the scope of the RSCAP. Until this comment was addressed to the IEOG's satisfaction, CECO temporarily discontinued work on RSCAP.
- Q. What problems have been identified to date by BCAP?
- A. No problems with construction have been identified to date, in that BCAP has not yet gone beyond the planning and program development stage.
- Q. Will CECO QA review the readiness of the CSR prior to the start of inspections?
- A. CECO BCAP QA will perform this review.
- Q. Will the IEOG have their own inspection personnel?
- A. IEOG will have inspection personnel as they deem necessary to perform their function. It is currently estimated that there will be three inspectors certified as Level III in accordance with ANSI N45.2-6. This number is subject to change based on the level of overinspections IEOG will require to assure itself that BCAP inspections are being properly performed.
- Q. Does IEOG intend to do inspections prior to, concurrent with, or after the CSR inspections?
- A. The IEOG expects to perform inspections both concurrent with and after CSR inspections.

- Q. How will CECO and the IEOG handle the past and ongoing work to procedures for which the IEOG has mandatory comments?
- A. IEOG believes two options are available, depending on the nature of the comment and the extent to which continuing work is affected by the comment. On a case by case basis, it will be decided whether work can continue or work must be halted pending resolution of the comment.
- Q. Has IEOG reviewed any comments on the BCAP which might have been provided by CECO's consultants?
- A. IEOG has not seen any such comments. IEOG would prefer to maintain an independent view of the BCAP Program.
- Q. Will BCAP review hardware for which discrepancies have been previously identified and which are being addressed by ongoing programs (e.g. small bore piping minimum wall concerns and material traceability)? By doing so, will BCAP bias the results of the CSR by looking at items previously scrutinized by CECO, the contractors, and the NRC?
- A. The CSR will select items from populations in two ways. One way selects items at random from the population, ensuring all items in the population have an equal probability of being selected for inspection. This will ensure that no class of items are excluded from the sample. The other method of sample selection is based upon engineering judgement, as discussed in the BCAP program document.

The NRC discussed with CECO and the IEOG several aspects of the training program applicable to BCAP. Additional discussions regarding this subject will be held on the site between CECO and the NRC BCAP inspector.

NRC has reviewed the CECO response to NRC comments on the BCAP. On the basis of this review, the NRC believes that the BCAP activities may proceed. Three remaining open items exist. The NRC will continue to review CECO's response to NRC comments I and III-3. Also, the NRC will interpret the "may" as a "will" in the second line of the second paragraph of CECO's response to NRC comment II-5.

The NRC stated they expected to discuss in future meetings significant construction discrepancies identified by BCAP as well as design-significant discrepancies.

In conclusion, the NRC reiterated their belief that the BCAP is an important effort.

## Enclosure 7

<u>NAME</u>	<u>POSITION</u>	<u>ORGANIZATION</u>
R. A. Gardner	Reactor Inspector	Region III, NRC
R. F. Warnick	Chief, Branch 1	Region III, NRC
C. E. Norelius	Director, Reactor Projects	Region III, NRC
J. G. Keppler	Regional Administrator	Region III, NRC
W. L. Forney	Chief, Section, 1A	Region III, NRC
R. D. Schulz	Sr. Resident - Braidwood	Region III, NRC
L. G. McGregor	S.R.I. Braidwood	Region III, NRC
R. J. Lauer	Attorney	Isham, Lincoln & Beal
E. D. Swartz	Nuclear Licensing Admin.	CECo
J. G. Toscas	Admin. Assist., Nuclear Info	CECo/Comm. Service
C. W. Schroeder	Proj. Lic. & Compliance Supt.	CECo
A. Scaccia	Off Site Emer. Planner	CECo
D. L. Leone	Projects Eng. Mgr. - BY & BR	CECo
G. F. Marcus	Director of Quality Assurance	CECo
B. R. Shelton	Projects Eng. Manager	CECo
G. M. Orlov	Asst. Director BCAP	CECo
R. L. Byers	Asst. Director BCAP	CECo
K. T. Kostal	Project Director Braidwood	S & L
L. O. DelGeorge	Asst. Vice President	CECo
R. E. Ham	Asst. Project Manager	ERC
J. L. Hansel	IEOG Project Manager	ERC
N. P. Smith	General Supervisor - QA	CECo
E. E. Fitzpatrick	Asst. Manager QA	CECo
N. N. Kaushal	Director, BCAP	CECo
M. J. Wallace	Asst. Mgr. of Projects & Proj. Manager Braidwood	CECo
T. J. Maiman	Manager of Projects	CECo
J. Strasma	Public Affairs Officer	NRC

Braidwood Station  
Braidwood Construction Assessment Program  
Program Progress Report  
Report Period August 1 - August 31, 1984

I. SUMMARY STATUS

This is the second monthly Progress Report on the Braidwood Construction Assessment Program (BCAP). This report covers the period from August 1 through August 31, 1984.

The Braidwood Construction Assessment Program was docketed with the Office of the Nuclear Regulatory Commission, Region III on June 22, 1984. Since that date four (4) primary plans have been prepared and approved. The four plans are the BCAP Overview Plan, the Construction Sample Reinspection (CSR) Plan, the Reverification of Procedures to Specification Requirements (RPSR) Plan, and the Review of Significant Corrective Action Programs (RSCAP) Plan. Sixteen (out of a total of seventeen) BCAP procedures have been prepared and are approved. The remaining procedure (BCAP-25 Evaluation of Results) has been drafted and is in the process of review and approval. Preparatory research and documentation gathering has begun to support the CSR, RPSR, and RSCAP elements of the BCAP.

As of August 31, 1984 the manpower assigned to the BCAP effort has risen to seventy-eight personnel. Office and clerical facilities have been established at the Braidwood Station to support the anticipated total BCAP workforce of eighty-two.

## II. SCHEDULE ANALYSIS

The overall BCAP effort is approximately three (3) weeks behind schedule. Delays in the completion of BCAP procedures have resulted in corresponding delays in the inspector training, preparation of reinspection & document review packages, and therefore, the performance of the reinspections. Detailed planning for the total effort to completion, is in progress.

## III. PERSONNEL AND EQUIPMENT STATUS

Actual BCAP manpower totaled seventy-eight (78) as of August 31, 1984. The planned manpower was anticipated to have been eighty-two (82) at this time. This difference is mostly attributable to scheduled vacation time taken this week. Inspection personnel are now on site in preparation for the start of reinspections in early September.

Office equipment and clerical support equipment have been installed and are in operation. The computerized MAPPER system for tracking verification packages has been installed and personnel have been trained in its use. At the current time there are no delays expected due to equipment.

#### IV. BCAP ELEMENT STATUS

##### A. CSR STATUS

During August, five of the six CSR procedures were issued and are now being used by the engineers in selecting samples, writing checklists and instructions and assembling the packages to be used by the inspectors. Three (BCAP-20, 21 and 22) of the five issued procedures are being revised to incorporate Independent Expert Overview Group (IEOG) and QA comments. Draft procedure CSR-25 (Evaluation of Results) has also been revised and is ready for final internal review.

A tentative list of construction categories has been established for the purpose of selecting a re-inspection sample from each category. The major activities currently in progress are the selection of samples from contractor tabulations of safety related work completed inspected and QA accepted, writing checklists and instructions for each construction category for both the hardware reinspection and document review phases, and assembling the documents and required references for the sample packages being assembled.

During this period, the procedure for training and certification of inspection personnel was also prepared and implemented. The training and certification of level III and level II inspection personnel is expected to be completed in time to support start of inspections in the first week of September.



Major activities to be completed in September will be:

1. Issuing CSR-25
2. Updating all procedures
3. Continuing the development of all the population checklists and instructions
4. Selecting the engineering judgement portions of the samples

B. RPSR Status

During August 1984, the RPSR group was primarily involved in updating the RPSR Plan and procedures, preparing tentative checklists of construction requirements contained in Sargent and Lundy specifications, and becoming familiar with pertinent documentation. The Plan was changed to reflect the three procedures that were developed to govern RPSR activities and to include the review of installation and inspection procedures against the regulatory commitments in the FSAR. Lessons learned during walkthroughs and the added requirement of the review against FSAR commitments were incorporated in the three RPSR procedures, BCAP 41, 42, and 43. Tentative checklists were prepared by each Lead Discipline Engineer for experience and standardization. The FSAR, contractor procedures, and applicable codes were perused for familiarization. The staff of the RPSR Element was increased to the planned number of seven during the month. One more structural engineer will be added in September to support the schedule.

C. RSCAP Status

All RSCAP personnel have received required training.

The review of the five programs listed below was initiated and has progressed as shown below.

- a. QCSSR - 62%
- b. Safety Related Pipe Supports - 50%
- c. NSSS Component Supports - 39%
- d. Electrical Installation Documentation Review - 21%
- e. Quality Control Inspector Reinspection - 21%

The checklists required by BCAP-60 are being developed and approved for the review of those programs. Support from other CECO Departments and site contractors has been good. The progress on the RSCAP element has been satisfactory.

V. PROBLEMS/DISCREPANCY FINDINGS

A. Implementation Problems

No significant problems have been encountered to date. Establishment of the BCAP organization and provision of logistical support to BCAP have proceeded smoothly. The minor delays in schedule have been primarily due to the effort required being greater than anticipated.

B. Major Discrepancy Findings

None to date.

VI. RECOMMENDATIONS

No specific recommendations are offered at this time.

*N N. Kaushal*

N. N. Kaushal, Director

Braidwood Construction Assessment Program

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