Doc. No. BCAP 001

Rev. 1

EVALUATION RESEARCH CORPORATION

QUALITY ASSURANCE PLAN

BRAIDWOOD CONSTRUCTION ASSESSMENT PROGRAM (BCAP)

Approved by John L. Hansel Date Aug. 10, 1984

John L. Hansel

8506240288 841016
PDR ADOCK 05000456
R PDR

SUMMARY OF REVISIONS

DATE	REV.	REVISION
8/10/84	1	Section 1, paragraph 1.1, page 4. Identified the Team Leader for QA and Audits as the individual responsible for inspection and auditing of BCAP activities.
8/10/84	1	Section 1, Figure 1.1-1, page 5. ERC/BCAP Organizational Chart redrawn to more clearly show the reporting level of the QA Manager. Also removed proper names from chart.
8/10/84	1	Section 1, Figure 1.1-2, page 6. ERC/BCAP Organizational Structure - removed proper names from chart.
8/10/84	1	Section 1, paragraph 1.3, page 7. Identified training of BCAP Project personnel as the QA Manager's responsibility.
8/10/84	1	Section 18, page 21. Included mention that objective evidence is examined for compliance with QA Program requirements and documented during audits.
8/10/84	1	Section 18, page 22. Included the responsibility of the QA Manager to perform periodic internal audits of the BCAP Task Team.

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0.0 INTRODUCTION

This Quality Assurance Plan describes the Quality Assurance Program which the ERC Independent Expert Overview Group will apply to the scope of work for the Commonwealth Edison Company, Braidwood Construction Assessment Program (BCAP) at the Braidwood Station, Braceville, Illinois.

The plan is designed to assure that the program activities affecting the validity of the program results will be conducted in accordance with the applicable quality assurance requirements of 10 CFR Part 50, Appendix B as identified later in this plan.

The Independent Expert Overview Group activities will include the following:

- Conducting an overall review of the BCAP scope document objectives and a review of each of the BCAP elements. Determining if the BCAP elements will fulfill the objectives.

- Ascertaining if the BCAP effort, as identified in the scope documents, is properly focused and whether the goals of the BCAP are being fulfilled.

- Conducting a minimum of two (2) audits that will address the implementation of each of the BCAP elements. Items to be specifically audited will be adherence to Program procedures, evaluation of Quality Assurance involvement, qualifications of the personnel

performing inspections, and identification of nonconformances and adequacy of the corrective actions.

- o Performing an independent review of selected BCAP identified discrepancies to provide assurance that the engineering evaluation for design significance was adequately performed and documented.

- o Preparing in-depth audit reports.

- o Preparing periodic status reports and a final report summarizing their overview activities and summary conclusions.

To conduct an independent overview of this type, it is essential that the Overview Group operate with some degree of freedom. The Overview Group will find it necessary to monitor CECo and it's subcontractors in a number of ways to determine if the BCAP objectives are being fulfilled, i.e., attend meetings, review plans and procedures, conduct random and unstructured surveillances and reviews of certain aspects of the program, assess the process for identifying discrepancies and the methods used for determining corrective action. These activities will be aimed at the Overview Group gaining insight into the effectiveness of BCAP and are not intended to influence or control the level of quality achieved in the facility. It is for this reason that they will not be addressed in this plan.

The Overview Group will be required to perform certain tasks that come under the purview of 10 CFR Part 50, Appendix B, i.e., audits, inspections,

training, records management, etc. This Quality Assurance Plan identifies the applicable criteria and the controls that will be applied by ERC.

1.0 ORGANIZATION AND RESPONSIBILITIES

1.1 PROJECT ORGANIZATION

Evaluation Research Corporation (ERC) as an outside organization will bring together and direct a team of experts whose purpose will be to provide an independent overview of the BCAP. ERC has formed this team of senior experts and professional staff to work under the direction of a Principal Consultant, who will be hereafter referred to as the Project Manager.

The Independent Expert Overview Group members will be free of any significant contacts with Commonwealth Edison Company. They will not have participated in the design, construction or quality assurance activities related to the Braidwood Station or with Braidwood site contractors within the past five years. Immediate family members will not be currently employed by Commonwealth Edison Company or a Braidwood site contractor. Members of their immediate family (parents, spouse, children and grandchildren) will not currently have a cumulative ownership and creditor interest in Commonwealth Edison Company or a Braidwood site contractor which exceeds 5% of the family annual income.

The Overview Group will conduct a comprehensive third-party overview of the BCAP, thereby providing an added measure of assurance in the confidence of the results of the BCAP.

ERC personnel conducting the BCAP overview will be organized (Figure 1.1-1) into task teams, consisting of senior expert team leaders and professional staff reporting to the Project Manager. The Team Leader identified for the Quality Assurance and Audits will be responsible for assuring that tests, inspections, examinations, and audits conducted in conjunction with BCAP are in accordance with the requirements of this Plan and implementing proceduers by personnel qualified or certified as required. The overall team will operate independently of the various Braidwood organizations and will communicate with Commonwealth Edison through a designated Commonwealth Edison representative. The task teams will have access to the Braidwood Station and access to contractor personnel, facilities and records associated with the Braidwood Station.

1

As shown in Figure 1.1-2, the overview team is matrix organized into task teams each having vertical responsibilities by discipline and horizontal by methodology. This provides a more cohesive means of performing the overall assigned task.

1.2 RESPONSIBILITY OF PROJECT MANAGER

The ERC Project Manager, who is reponsible for the overall activities of the Independent Expert Overview Group, reports directly to the Commonwealth Edison (CECo) Manager of Projects, who reports to the President and

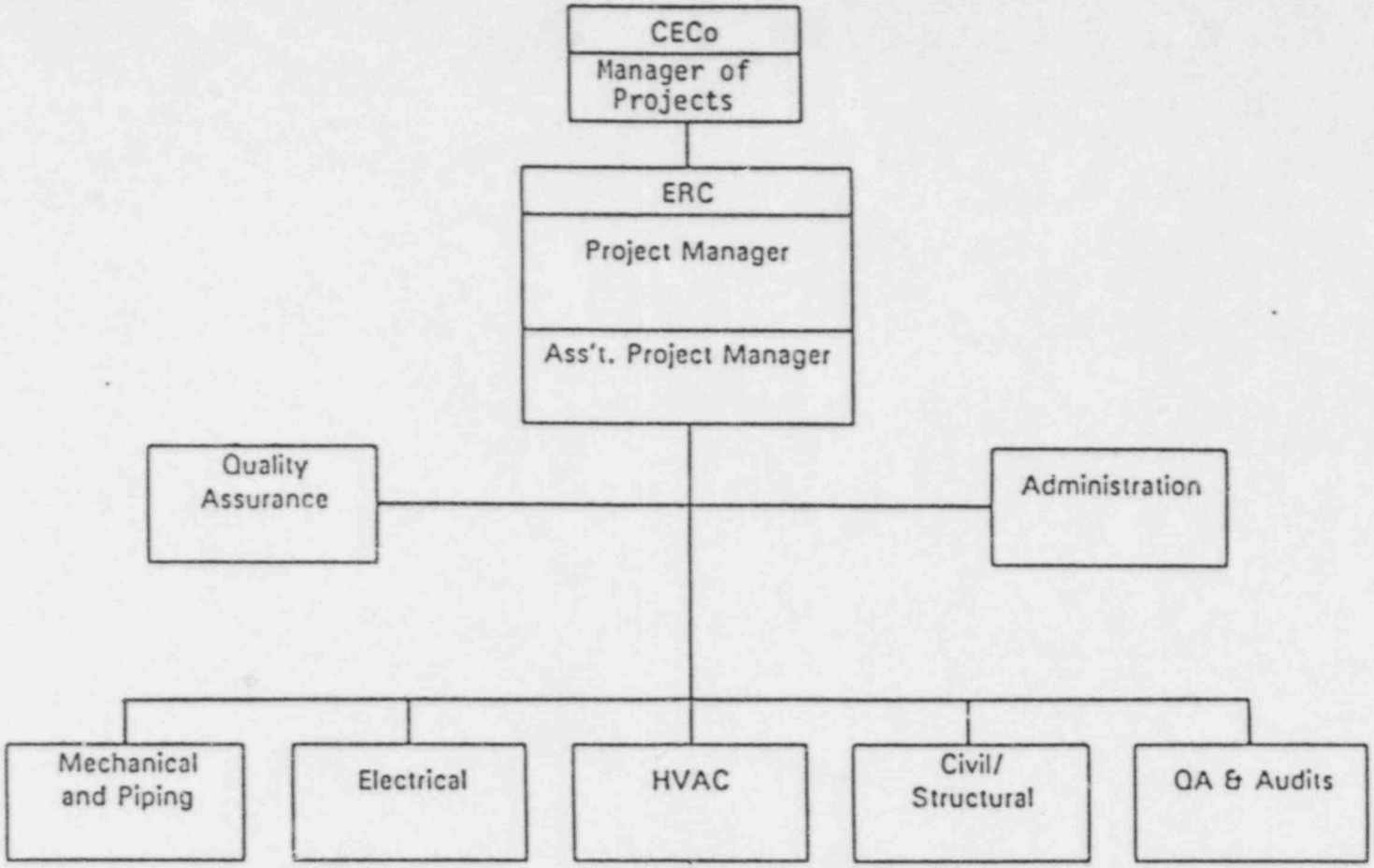

Figure 1.1-1. ERC/BCAP Organizational Chart

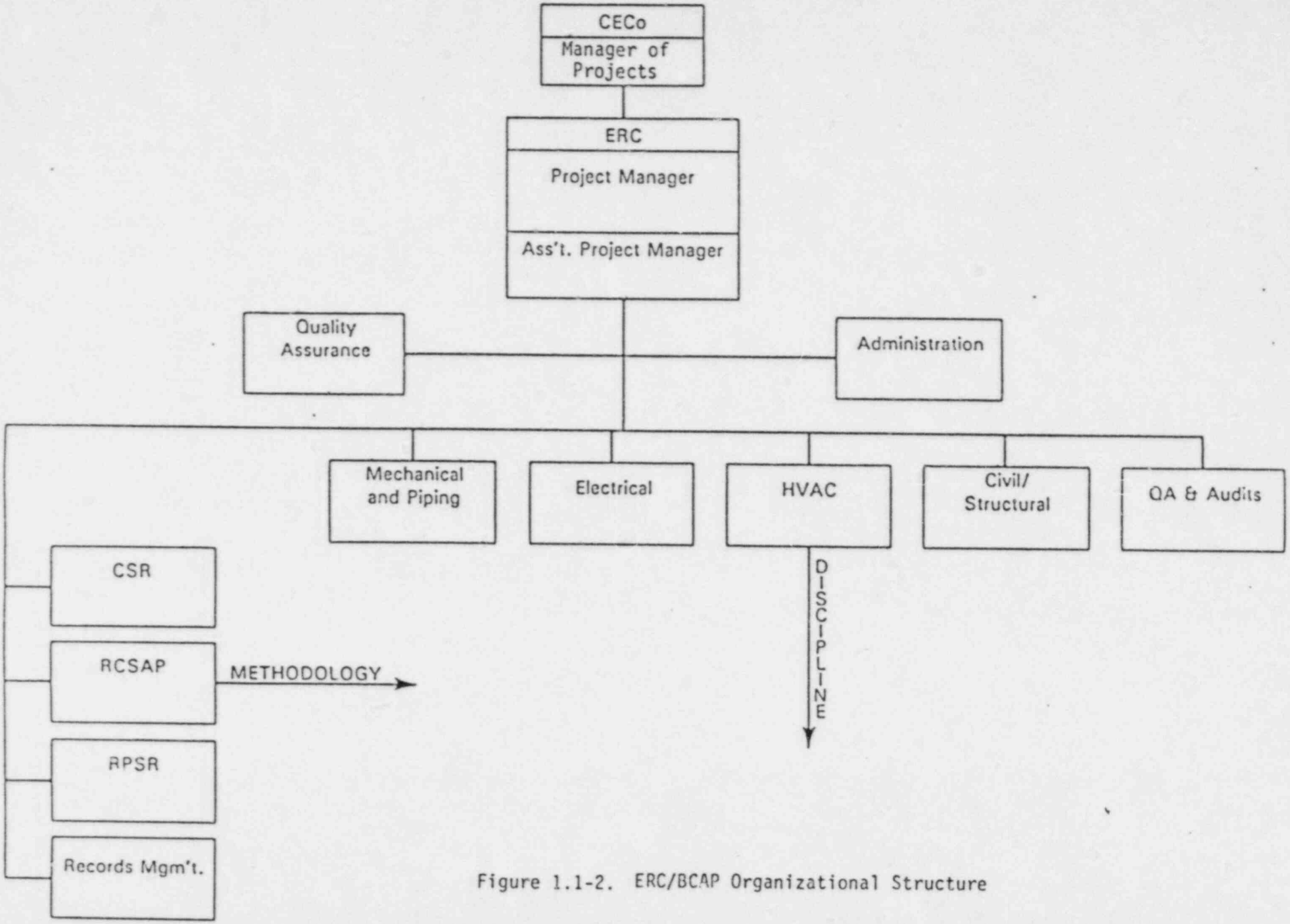

Figure 1.1-2. ERC/BCAP Organizational Structure

Chairman of the Board of CECo. The ERC Project Manager will regularly report to the Manager of Projects regarding the effectiveness of the BCAP program.

1.3 QUALITY ASSURANCE MANAGER

The Quality Assurance Manager reports to the ERC Project Manager. This level of reporting provides organizational freedom to identify quality problems and verify implementation of solutions. It also assures appropriate attention and high priority at the top management level. He has no other duties or responsibilities unrelated to the overview program that would divert his full attention from the overview function. This organizational structure avoids any compromise of program quality due to other requirements such as scheduling and costs.

The Quality Assurance Manager is responsible for assuring that the Overview Group complies with the requirements of this Quality Assurance Plan. The QA Manager shall also assure that ERC personnel assigned to BCAP are indoctrinated, trained, and certified, as required, in accordance with applicable procedures.

1.4 QUALIFICATION REQUIREMENTS

The Quality Assurance Manager shall have the following minimum qualifications:

1. Shall have either a B.A. or B.S. degree or equivalent.

2. Shall have a minimum of 10 years experience, with at least 5 years of supervisory experience, in quality assurance, engineering, manufacturing and procurement, or combination thereof, associated with nuclear facilities or equivalent operations. A minimum of 3 years of this experience shall be in Quality Assurance.

3. Shall possess a knowledge and understanding of applicable standards, regulations, and codes such as the ASME Boiler and Pressure Vessel Code. He shall have a working knowledge and understanding of quality assurance methods and their application.

4. Shall be experienced in organizing, directing, and administering an overall program or activity, or a major portion of an overall program having broad scope and application.

2.0 QUALITY ASSURANCE PROGRAM

2.1 QUALITY ASSURANCE PLAN

This Quality Assurance Plan recognizes the need to establish and implement a Quality Assurance Program in accordance with the quality assurance requirements of 10 CFR Part 50, Appendix B. The Quality Assurance Program is documented by written policies and procedures. These documents define the details of how work is performed and verified to meet the quality requirements of the program. The procedures which apply to the

BCAP program are identified in Table 2.1-1 of this plan. These specific procedures are maintained in controlled manuals. The Project Manager has approved the QA Plan and issued a directive to all personnel who either perform or verify work that compliance with the Quality Assurance Plan is mandatory. The Plan is maintained and controlled by the Quality Assurance Manager and is reviewed at least annually and modifed as necessary to keep it current and up-to-date.

2.2 PERSONNEL QUALIFICATIONS

ERC determines the initial capabilities of employees and contract personnel (hereafter referred to as employees) by verifying the professional (both educational and employment) qualifications of all new hires in accordance with standard employment practices. Records of these verifications are maintained in the employee's personnel folder. The employee's continued proficiency and understanding of job requirements are monitored on an on-going basis and documented annually through management assessments, which includes proficiency testing where appropriate.

During the BCAP program, ERC will determine compliance to requirements through selected hands-on reinspections, and reviews of inspection documentation and inspector qualification records. All ERC reinspection verification operations will be performed by personnel qualified or certified as required by procedures, codes, specifications and standards.

TABLE 2.1-1

BCAP QUALITY ASSURANCE PROGRAM INDEX

Quality Elements	Implementing Procedures and Titles
1. ORGANIZATION (10CFR50, Criterion #I)	QAP-1.1 Personnel Qualifications QAP-1.2 Indoctrination and Training of Personnel
2. QUALITY ASSURANCE PROGRAM (10CFR50, Criterion #II)	DP&P-101 Quality Assurance Policy
3. DESIGN CONTROL (10CFR50, Criterion #III)	N/A
4. PROCUREMENT DOCUMENT CONTROL (10CFR50, Criterion #IV)	QAP-4.1 Procurement Document Control
5. INSTRUCTIONS, PROCEDURES & DRAWINGS (10CFR50, Criterion #V)	QAP-5.1 Preparation, Review and Approval of Quality Assurance Procedures
6. DOCUMENT CONTROL (10CFR50, Criterion #VI)	QAP-6.1 Distribution and Control of Quality Assurance Documents
7. CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (10CFR50, Criterion #VII)	N/A
8. IDENTIFICATION AND CONTROL OF MATERIAL, PARTS, AND COMPONENTS (10CFR50, Criterion #VIII)	N/A
9. CONTROL OF SPECIAL PROCESSES (10CFR50, Criterion #IX)	N/A
10. INSPECTION (10CFR50, Criterion #X)	QAP-10.1 Quality Review and Surveillance QAP-10.2 Qualification of Inspection Personnel
11. TEST CONTROL (10CFR50, Criterion #IX)	N/A

TABLE 2.1-1 (continued)

BCAP QUALITY ASSURANCE PROGRAM INDEX

Quality Elements	Implementing Procedures and Titles	
12. CONTROL OF MEASURING AND TEST EQUIPMENT (10CFR50, Criterion #XII)	N/A	
13. HANDLING, STORAGE, AND SHIPPING (10CFR50, Criterion #XIII)	N/A	
14. INSPECTION, TEST, AND OPERATING STATUS (10CFR50, Criterion #XIV)	N/A	
15. NONCONFORMING MATERIAL, PARTS, OR COMPONENTS (10CFR50, Criterion #XV)	QAP-15.1	Documentation and Disposition of Observations and Discrepancies
16. CORRECTIVE ACTION (10CFR50, Criterion #XVI)	QAP-16.1	Corrective Action
17. QUALITY ASSURANCE RECORDS (10CFR50, Criterion #XVII)	QAP-17.1	Quality Assurance Records Program
18. AUDITS (10CFR50,, Criterion #XVIII)	QAP-18.1	Quality Assurance Audit Program
	QAP-18.2	Qualification of Audit Personnel

2.3 TRAINING

Indoctrination and training sessions are conducted for all new project members. This training is accomplished in group sessions and individual discussions covering the purpose, scope, and implementation of quality-related manuals, procedures and instructions.

3.0 DESIGN CONTROL

Evaluation Research Corporation has no responsibility for design control within the Braidwood Construction Assessment Program.

4.0 PROCUREMENT DOCUMENT CONTROL

Evaluation Research Corporation responsibility for the BCAP does not include the requirement to purchase material or equipment, however, independent contractors' services are contracted. Contract actions are initiated by the cognizant ERC person. It is the responsibility of the requisitioner to identify the requirements and qualifications required of the contractor. The procurement document shall specify the qualification or certification documentation required, and need for security clearance. These procurement documents are reviewed and approved by the Quality Assurance Manager.

5.0 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

The Quality Assurance Program provides that all activities affecting quality are to be accomplished in accordance with documented policies and procedures and that appropriate quantitative and qualitative means of verifying quality are to be satisfactorily delineated and included as appropriate. As such, ERC uses written procedures implementing the Quality Assurance Program requirements to provide assurance that all activities affecting quality are planned, controlled, and documented as appropriate.

Each procedure contains detailed instructions for the execution of activities in accordance with the approved Quality Assurance Program. Approval and distribution of procedures and changes to those procedures are controlled by the Quality Assurance Manager. Details of measures implemented to control preparation, review, approval, release, change, and distribution of procedures and instructions are described in Section 6.0 of this document. When issued, procedures are mandatory for all personnel either performing or verifying quality-related activities for BCAP by written directive from the ERC Quality Assurance Manager.

6.0 DOCUMENT CONTROL

Policy and procedure documents for the BCAP are subject to control. The measures implemented for document control are contained in the various procedures of the Quality Assurance Manual. Controls are imposed for initial review and approval actions, release of the documents and for distribution of the documents to designated personnel who either perform or

verify quality related work to assure that they are available at the location where the prescribed activity is performed. Revisions to these documents are reviewed and approved by the same organizations who approved the original documents. These revisions are distributed in the same manner as the initial issue.

The Quality Assurance Plan for BCAP is prepared, maintained, distributed and controlled by the Quality Assurance Project Manager.

Policy and procedures documents are either distributed to authorized manual holders or to standard distribution lists with receipt acknowledgement required. Distribution is controlled to assure availability of the documents, and revisions, to all affected personnel. An updated controlled table of contents is issued to affected personnel when a revision to a procedure is issued. This mechanism provides immediate visibility to the user to assure that an obsolete issue is not followed in either performing or verifying work. Holders of the various manuals are responsible to update their manuals as revised procedures are received, by inserting the revised procedure and destroying the superseded procedure.

7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

As stated in Section 4.0, "PROCUREMENT DOCUMENT CONTROL", Evaluation Research Corporation's responsibility for the BCAP does not include the requirement to purchase material or equipment, however, independent contractors' services are contracted. The Quality Assurance Program describes

controls for assuring that purchased services conform to procurement document requirements and that independent contractors meet the professional qualifications for the task to be assigned. These control measures include, as appropriate, evaluation and selection of contract personnel, evaluation of contractor performance effectiveness, and examination and appraisal of documents generated during course of effort (reports, specifications, drawings, etc.). Assessments of performance shall be performed at intervals consistent with the importance, complexity, and duration of the service. Records of these qualifications and assessments are maintained in the Quality Assurance Manager's files.

The provisions of this section do not apply for services where special skills do not apply.

8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

Evaluation Research Corporation has no responsibility for identification and control of materials, parts, and components within the Braidwood Construction Assessment Program.

9.0 CONTROL OF SPECIAL PROCESSES

The control of special processes such as welding, heat treating, nondestructive examination, cleaning, bonding, coating, soldering, plating and hard surfacing, is a function for which ERC has no direct responsibility within the BCAP program.

10.0 INSPECTION

ERC has no direct responsibility for inspection activities affecting quality within the Braidwood Construction Assessment Program. However, during the BCAP program, ERC will determine compliance to requirements through selected hands-on reinspections, and reviews of inspection documentation and inspector qualification records. All ERC reinspection verification operations will be performed by personnel qualified or certified as required by procedures, codes, specifications and standards.

All reinspection and document review activities and the results will be documented in accordance with applicable procedures and submitted to the Quality Assurance Manager for review and reporting to BCAP.

11.0 TEST CONTROL

ERC has no direct responsibility for test control activities within the Braidwood Construction Assessment Program.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

ERC has no direct responsibility for the control of measuring and test equipment within the Braidwood Construction Assessment Program.

13.0 HANDLING, STORAGE, AND SHIPPING

ERC has no direct responsibility for handling, storage, and shipping activities within the Braidwood Construction Assessment Program.

14.0 INSPECTION, TEST, AND OPERATING STATUS

ERC has no direct responsibility for inspection, test, and operating status activities within the Braidwood Construction Assessment Program.

15.0 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

ERC has no direct responsibility for activities related to nonconformance, parts, or components within the Braidwood Construction Assessment Program. However, nonconforming items identified by ERC during reinspection and document review activities will be documented and brought to the immediate attention of BCAP management for resolution within the BCAP Quality Assurance Program.

The Project Quality Assurance Manager shall assure that all nonconformances identified by ERC are documented in accordance with BCAP procedures.

16.0 CORRECTIVE ACTION

ERC has no direct responsibility for corrective action activities within the Braidwood Construction Assessment Program. However, conditions

adverse to quality or deficiencies in the BCAP and implementing procedures which indicate that program objectives may not be fulfilled which are identified by ERC shall be documented.

The Project Quality Assurance Manager shall report these situations to the appropriate BCAP management and shall assure that appropriate corrective actions are completed.

17.0 QUALITY ASSURANCE RECORDS

Commonwealth Edison Company has the responsibility for the BCAP Quality Records Management System. The specific inspections and reviews performed under BCAP together with the results of these inspections and reviews with objective evidence for traceability and reproducibility will be documented by the BCAP organization in a manner suitable for auditing. Such documentation will be retained as permanent quality records as stated in the BCAP program document.

Those records which are necessary to document the quality assurance activities performed by ERC personnel are listed in ERC procedures along with the organizational responsibility for their collection, maintenance, storage, and retrieval.

These records shall include, but are not limited to:

- Quality Program Plans and Manuals
- Procedures

- o Procurement Documents to Contractors
- o Personnel Qualifications
- o Activity Reports
- o Audit Packages (Plans, Reports, etc.)
- o Verification and Evaluation Documents

Duplicates of ERC records identified by the BCAP Project Manager as quality records will be transferred to the BCAP Records Management Operation for incorporation into the BCAP records system. Record storage facilities at ERC are located in an area which has fire, water, and environmental controls that comply with the requirements and regulations covering office space provided for employees. Duplicate copies as required may be available at the ERC work areas at the Braidwood Station.

18.0 AUDITS

An audit program will be maintained and implemented a minimum of two (2) times which will address the implementation of each BCAP element. Items to be specifically audited will be adherence to program procedures, evaluation of Quality Assurance involvement, qualifications of the personnel performing inspections, and identification of nonconformances and adequacy of the corrective actions.

Procedures are established and implemented for conducting these audits. Audit plans are developed, implemented, and documented in accordance with these procedures. The audit teams will consist of a lead auditor qualified in accordance with ANSI 45.2.23, "Qualification of QA Program

Audit Personnel" and team members with appropriate training and experience to evaluate the adequacy and implementation of the BCAP elements. In order to preserve objectivity in the audits, the teams will be composed of members of the ERC task force who have no direct responsibility for the area or activity being audited.

The salient elements of the audit program are:

- Audits are scheduled and initiated sufficiently in advance to assure effective Quality Assurance Program implementation during the BCAP program.

- Planning of audits results in a documented audit plan which identifies the specific activities to be audited, the requirements upon which the audit is based, the team members, and team leader.

- Notification of the responsible management of the work activity to be audited identifying the audit plan, team members, and audit date.

- Preparation of the documented audit checklists by the audit team and the orientation of team members by the audit team leader prior to the audit.

- Conduct of audits in accordance with the prepared checklists, to include the documentation that objective evidence was examined for compliance with QA Program requirements.

- A post-audit conference to discuss audit findings at the conclusion of the audit, with the management personnel responsible for the audited activity.

- Documentation of audit results, including critique, to the management responsible for the work audited.

- Response from the management responsible for the work audited indicating corrective action taken, or to be taken, to preclude recurrence of deficiencies and a scheduled completion date.

- Evaluation of adequacy of the response and follow-up to assess implementation of corrective action.

- Reaudit of deficient areas, if necessary, and documented closeout of open items.

The documentation aforementioned shall consist of a written report distributed to the BCAP Project Manager and will contain the following information as a minimum:

- Description of the audit team, the audit performed and the criteria used.

- The audit findings including copies of Audit Action Reports.

- The audit conclusions.

- Any agreement made with the audited organization to implement corrective actions including a time schedule for such implementation.

The reports require that the audited organizations reply within an agreed to time following receipt of the audit report, identifying planned corrective actions for deficiencies and a schedule for implementing the corrective actions.

Quality Assurance follow-up of the corrective actions is accomplished to confirm that the actions have been completed as scheduled. Closeouts of all significant findings are documented.

The ERC Quality Assurance Manager will audit the Task Team to verify compliance with the requirements of this Plan and the applicable implementing procedures. Audits will be conducted annually or at least once during the life of the Project, whichever is shorter.

APPENDIX I

The following ANSI Standards are used as guidelines for developing applicable ERC procedures for the BCAP program.

1.	N45.2	Quality Assurance Program Requirements for Nuclear Power Plants
2.	N45.2.6	Qualifications of Inspection, Examination and Testing Personnel for Nuclear Power Plants
3.	N45.2.9	Requirements for Collection, Storage and Maintenance of Quality Assurance Records for Nuclear Power Plants
4.	N45.2.10	Quality Assurance Terms and Definitions
5.	N45.2.12	Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants
6.	N45.2.23	Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants

APPENDIX E. Observations

EVALUATION
RESEARCH
CORPORATION

QAP-15.1
Attachment 6.1

OBSERVATION REPORT

Observation No. BCAP-OBS-001

Date 8/28/84

To: BCAP Director

From: ERC Project Manager

J L Housel 8/29/84
Signature Date

Observation: BCAP-01, "Qualification and Certification of Inspection Personnel", Rev 0, provides the method to be used for qualification and certification of BCAP personnel. Personnel supplied by an approved contractor are required to provide their certification documentation, receive site/BCAP specific training, and be appropriately tested and accepted by CEC's Level III QA personnel. Certification requirements for personnel not supplied by an approved contractor are essentially (CONTINUED)

Signature of Originator Date

Catherine A Thompson 8/28/84

Response (Requested within 30 days of above date.):

See attached response

BCAP Director Date 9-13-84

R. L. Byers For N.N.K.

Response is ☐ Acceptable ☐ Unacceptable

RCA No. _____ Issued

Signature _____ Date _____

ERC Project Manager

equivalent to the requirements for a new hire, ie: Certification to basic discipline requirements. Daniel International is not an approved contractor, therefore, the personnel supplied by Daniel need to qualified and certified to basic discipline requirements, not just the site/BCAP unique requirements as is currently being practiced. In fact, the entire certification program is being administered by Daniel personnel, none of which have been certified in accordance with BCAP-08. Records of OJT, class attendence, reading assignments, etc are being signed as acceptable by individuals who are not yet certified. OJT records have been signed "Level III Inspection Lead" by non-certified personnel. It is not clear either as to who will certify the "Certifying authority", the BCAP Inspection Supervisor.

An additional area of conflict exists relative to the certification documentation. ASME/ANSI N45.2.6 requires that the identification of the certifying organization appear on the certification documentation. Four (4) documents make up the certification documentation. Only one of the four identifies any organization and it merely states "BCAP". The (CONTINUED)

[illegible] OLS-001
8/28/84
Page 3 of 13.

Vision Acuity Test Form, though not one of the certification documents, identifies "Daniel International" as the "Company". The certifying organization needs to be identified for both approved and non-approved contractors.

Catherine M. Thompson 8/28/84

Responses to specific observation statements in BCAP-OBS-001 in order of appearance within the description are:

1. Observation. "Daniel is not an approved contractor, therefore ..."

   Response - Daniel is an approved contractor - see Exhibit A, attached.

2. Observation. "In fact, the entire Certification program is being administered by Daniel personnel, none of which have been certified in accordance with BCAP-08."

   Response - Activities performed to date have either not been required to be performed by certified personnel or the items have been pre-approved by CECo Certified Level III personnel.

   In addition the Daniel personnel are appropriately qualified to administer an inspector indoctrination and training program. The appropriate Daniel personnel will be certified in accordance with BCAP-08 provisions prior to performing personnel certifications or any BCAP CSR element reinspections or document review activities. The BCAP-08 Certification program has been evaluated and found acceptable by CECo QA Level III personnel and other CECo representatives (See BCAP-08 approvals and Exhibit B attached).

3. Observation. "Records of OJT, class attendance, reading assignments, etc. are being signed as acceptable by individuals who are not yet certified."

   Response - None of the above documents have been used as records for BCAP certification. The individuals performing the subject acts are qualified to perform the referenced activities. The alleged improper activities do not require certified personnel. The use of these documents as a basis for certification will require an appropriately certified person.

4. Observation. "OJT records have been signed "Level III Inspection Lead" by non-certified personnel."

   Response - These documents have not been used as a basis for the additional BCAP Cetification. The Level III Inspection Lead is an approved BCAP title and the individuals signing these forms are appropriately qualified Level III Lead Inspectors; however, they are not yet BCAP certified. These documents will be reviewed and signed by the BCAP certifying authority if used as a basis for BCAP program certification.

5. Observation. "It is not clear either as to who will certify the "Certifying Authority," the BCAP Inspection Supervisor."

Response - Paragraph 3.4 of BCAP-08 clearly designates the BCAP Inspector Supervisor as the BCAP Certifying Authority. This procedure document is approved by the Braidwood Project Manger, BCAP Director, and a CECo QA Level III.

6. Observation. "ASME/ANSI N45.2.6 requires that the identification of the Certifying Organization appear on the Certification documentation."

Response - The principal BCAP document which fulfills the ANSI N45.2.6 written certification requirements is titled "BCAP Document Of Certification" (Exhibit C). Space 5 on this form will bear the name and signature of the BCAP Certifying authority who is a Daniel employee. Daniel International Corporation will be identified in Space 5. This is adequate to fulfill the referenced requirement.

(0300J)

EXHIBIT A

August 16, 1984
6-12-84-37

Subject: Approved Bidders List
Daniel International Corp.
Technical Services Division
Daniel Centre
Greenville, S.C. 29602

Mr. R. E. VanDerway:

The Station Nuclear Engineering Department and the Quality Assurance Department have reviewed and evaluated the Quality Assurance Program of the Subject Vendor and find that it complies with all appplicable criteria of Title 10 Code of Federal Regulations, Part 50, Appendix B.

On the basis of this evaluation and having no technical objections, we recommend that the Subject Vendor be added to the Approved Bidders List as a Supplier of Safety-Related inspection services.

8-17-84
Station Nuclear Engineering Manager

8-24-84
Manager of Quality Assurance

JFD:kaa
5501Q

Attachment

cc: W. J. Shewski

EXHIBIT B

TO: D. M. McAfee

FROM: H. J. Lapp, Jr.

DATE: August 28, 1984

SUBJECT: Review of BCAP Procedure BCAP-08, Qualification and Certification of Reinspection Personnel.

I have completed the review of the Braidwood Construction Assessment Program's Procedure, BCAP-08, Qualification and Certification of Reinspection Personnel.

Based on that review I have found BCAP-08 to be in compliance with Project Management's training procedure, PM-06, Project Training Requirements and Records. It is also in compliance with PM-03, Braidwood Project New Employee Orientation Training Program.

H. J. Lapp, Jr.
Project Training Coordinator

cc: File X.2
R. C. Schleiter

HJL/kaw

(0166k)

EXHIBIT C

BCAP DOCUMENT OF CERTIFICATION

1. EMPLOYEE NAME	SOCIAL SECURITY NUMBER

2. PHYSICAL EXAMINATION

3. EYE EXAMINATION

4. CERTIFICATION
DISCIPLINE
SUBDISCIPLINE

LEVEL

5. CERTIFIED

DATE

6. DATE OF CERTIFICATION EXPIRATION

. SUMMARY OF:
A. EDUCATION
B. EXPERIENCE
C. TEST RESULTS
D. CAPABILITY DEMONSTRATION RESULTS

EVALUATION
RESEARCH
CORPORATION

OBSERVATION REPORT

Observation No. BCAP-OBS-002

Date September 13, 1984

To: N. Kaushal
BCAP Director

From: ERC Project Manager

RE Ham for JL Hansel
Signature

9/13/84
Date

Observation: As part of the IE&G overview of the CSR element of BCAP (CSR Plan and procedures BCAP-20, -21, -22, -23 & -24) the Checklist for Small Bore Piping Configuration was reviewed. Incidental to this checklist, as-built drawing FG-2537A-15A, Rev A intitled, "Component Cooling", was reviewed. This review disclosed that this drawing appears to contain incomplete information essential to perform the necessary re-inspections. Specifically, the following

Signature of Originator
Wayne L Chase

Date
9/13/84

Response (Requested within 30 days of above date.):

BCAP Director

Date

Response is ☐ Acceptable ☐ Unacceptable

RCA No. _____ Issued

Signature _____
ERC Project Manager

Date _____

QF-15.1.1 8/84

information appears to be incomplete with regard to attesting to the fact that the as-constructed system agrees with design requirements:

1. Valve orientation
   a. Flow direction vs. the flow arrow on the valve

   b. Stem direction and orientation

2. Orientation of branch connections

3. Drainage
   a. Main piping

   b. Branch connections

   c. Trapped sections

APPENDIX F. Audit Reports

ERC

FIELD OPERATIONS

EVALUATION
RESEARCH
CORPORATION

1755 Jefferson Davis Hig
Suite 800
Arlington, Virginia 22202
(703) 979-8220

800 Oak Ridge Turnpike
Suite 501
Oak Ridge, Tennessee 3783
(615) 482-7973

September 11, 1984
BCAP 018

Commonwealth Edison Company
Braidwood Station
R.R. #1, Box 81
Braceville, Illinois 60407

Attention: Mr. N. Kaushal

SUBJECT: Independent Expert Overview Group Audit (ERC 84-101) conducted September 11-12, 1984

REFERENCE: A. E. Cocoros to N. Kaushal letter serial BCAP-010 dated September 5, 1984

Dear Mr. Kaushal:

This letter is to transmit the report of the subject audit announced by the reference letter. There were no findings of deviation noted, however, a comment was passed on to Mr. M. Dougherty that consideration should be given to providing a statement to the documentation of the sample size selection (par. 4.4) for a sample size expansion in the event of abnormal findings. Since there were no findings, no response is required.

The audit team wishes to express its appreciation to the BCAP personnel for their courtesies and cooperation during the course of the audit.

Any questions on this subject are to be addressed to the writer, Ext. 2787.

Yours truly,

A. E. Cocoros, Manager
Quality Assurance

AEC/sjs

cc: T. Maiman
R. M. Pokorn
R. N. Gardner
J. G. Keppler
BCAP Team
File (2)

Report
Audit ERC 84-101
ERC Audit of BCAP
Date: Sept. 11-12, 1984

Purpose: The purpose of the audit was to assess compliance with the requirements of BCAP-60 "RSCAP-Review Method".

Audit Team:

A. E. Cocoros - ERC Lead Auditor
C. M. Thompson - ERC
J. E. Young - ERC

The audit was initiated with an opening meeting on September 11, 1984, at 8:30 a.m. The audit's purpose, scope and agenda were presented. The results of the audit were presented at the close-out meeting held on September 12, 1984, at 9:00 p.m. The attendees of those meetings are provided in Attachment A.

Audit General:

The audit was conducted using checklists containing the requirements of the following paragraphs of BCAP-60; 4.1.2, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.1.7.4, 4.1.8.1, 4.1.8.2, 4.1.8.3, 4.2.2, 4.2.3, 4.2.5, 4.2.9, 4.2.10, 4.3.2, 4.3.3, 4.3.4, 4.3.7, 4.3.8, 4.4.1, 4.5, 4.5.3, 4.5.4, and 4.5.5.

At the time of the audit only two of the nine programs had progressed to the point of being auditable. The two programs audited and personnel contacted were:

1. Program 004-"Quality Control Structural Steel Review" (QCSSR)
   a. M. Dougherty
   b. L. Rouen

2. Program 006-"Safety Related Pipe Supports"
   a. M. Dougherty
   b. E. Kurtz
   c. T. Parker

Audit Findings:

During the review of each paragraph outlined above for the two programs, there were no findings of deviation identified.

General Comments:

Consideration should be given to providing a statement to the documentation of the sample size selection (par. 4.4) for a sample size expansion in the event of abnormal findings.

Attachment A

ERC Audit of BCAP
ERC 84-101
9/11-12/84

Meeting Attendance

Name:	Organization:
M. R. Dougherty	BCAP
R. M. Pokorn	CECo
R. L. Byers	BCAP
C. M. Thompson	ERC
J. E. Young	ERC
A. E. Cocoros	ERC
*R. E. Spence	BCAP
*R. N. Gardner	NRC

*Post Audit Mtg. Only

EVALUATION RESEARCH CORPORATION
QUALITY ASSURANCE AUDIT REPORT

Audit No's: ERC 84-102 Dates: 9/18 - 27/84

I. Audit Scope

To evaluate the adequacy and implementation of the BCAP Administrative Procedures, BCAP-01 thru BCAP-08, in accordance with the requirements of BCAP Program Plan dated June, 1984.

I I. Audit Team

J. E. Young - Team Leader
C. M. Thompson - Team Member
J. E. Hoff - Team Member

III. Personnel Contacted

M. R. Dougherty	1,2,3	BCAP
M. L. Williams	1,2,3	BCAP
R. L. Byers	1	BCAP
L. S. Weiss	1,2	BCAP
M. Klayman	1	BCAP
M. A. Clinton	2,3	BCAP
R. M. Pokorn	3	CECo
V. A. Hoffman	3	BCAP
R. E. Ham	3	IEOG
N. N. Kaushal	2,3	BCAP
G. M. Orlov	2,3	BCAP
J. C. Thompson	2	BCAP
N. Szabat	2	BCAP

NOTE: 1 - Indicates attendance at Pre-Audit Conference
2 - Contacted during audit.
3 - Indicates attendance at Post Audit Conference.

IV. Summary of Audit Results

As a result of the audit, four (4) Audit Action Requests (AAR's) and (1) concern were issued. These were issued in the area of Qualification and Certification of Reinspection Personnel. One (1) comment was stated in the area of BCAP Interface With Contractors And Architect Engineers.

The following is a summary of the criteria audited, including audit findings and concerns:

A. BCAP-01, "Program Indoctrination for Employees"
At the time of the audit, the Audit Team had not been issued Revision One (1) of BCAP-01. The checklist for Rev. 0, and a copy of of Procedure BCAP-01 Rev. 1 was utilized to verify implementation. This area considered satisfactory.

B. BCAP-02, "Organization & Responsibility"
This area was not reviewed during this audit. The effectiveness will be evaluated during a subsequent audit.

C. BCAP-03, "Records Management"
This area was not reviewed during the audit due to personnel being unavailable. This will be reviewed during a subsequent audit.

D. BCAP-04, "BCAP Interface with Contractors and Architect/ Engineer"
During the audit, it was noted that Document Request Logs were found to be in various stages of completion. The following comment was discussed during the Post Audit Conference:

> It was observed that many procedural steps relating to the Document Request Forms were not being followed. This procedure should be reviewed to determine if those steps are necessary.

This comment is stated for consideration only and does not require a response.

E. BCAP-06 "Observation and Discrepancy/Concern Processing"
During the audit three (3) observations had been prepared and are entered into the MAPPER System. The observations had not been processed any further, therefore, verification of implementation will continue during a subsequent audit.

F. BCAP-07, "BCAP Reports"
The Audit Team elected not to review this area at this time. This will be evaluated in conjunction with BCAP-03.

G. BCAP-08, "Qualification and Certification of Reinspection Personnel"
At the time of the audit, no inspectors had been certified. However, during the review, four (4) Audit Action Requests (AAR's), and one (1) concern were issued. These are identified as follows:

AAR #84-102-1: The indoctrination exams taken by individuals to be certified as Level III had also been approved by these same individuals.

Prior to the Post-Audit Meeting on 9/27/84, was verified that a new indoctrination exam has been developed and approved by the BCAP Inspection Supervisor in accordance with BCAP-08. The potential Level III's have been re-examined, therefore, this finding is considered to be resolved.

AAR #84-102-3: Training Lesson Plans were approved by individuals as Level III Inspection Leads who were not yet certified to BCAP-08.

AAR #84-102-4: BCAP-08, Appendix V, Section II, requires a forty (40) question area exam. During the audit, a review of exam banks indicated there were no area exams.

Concern 1: During the review of three (3) inspection personnel packages who were scheduled for certification, it was noted that one of the inspectors did not meet the Education/Experience Requirements of N45.2.6.

The requirement states that with a high school education, a person must have "three (3) years experience in Quality Testing and/or Inspection or related activities, or one (1) year satisfactory performance as a Level I.

The individual, K. Daniels, has a high school education and only twenty-one (21) months experience. The records did not indicate certification to Level I as a substitute for years of experience.

V. Effectiveness

Within the scope of the audit, the implementation of BCAP Administrative Procedures, BCAP-01 thru BCAP-08, appears to be adequate, except as noted on the attached Audit Action Requests.

VI. Attachment

AAR #84-102-1
AAR #84-102-2
AAR #84-102-3
AAR #84-102-4

J E Young 10/2/84
AUDIT TEAM LEADER

A. E. Cocoros /GEC
QUALITY ASSURANCE MANAGER

EVALUATION RESEARCH CORPORATION

AUDIT ACTION REQUEST
#84-102-1

1. COMPANY/ACTIVITY
Commonwealth Edison Company
Braidwood Construction Assessment Program

2. REPORT NO. ERC 84-102
DATE 9/27/84

3. AUDITOR
J. E. Young J E Young 9/27/84

4. DISCUSSED WITH
M. Clinton

5. RESPONSIBLE MANAGER
N. Kaushal

6. LOCATION Qual. & Cert. of Reinspection Personnel

7. REQUIREMENT
BCAP-08 Rev. 0 Para. 3.2

8. FINDING

PAGE 1 OF

Requirement: "Newly-assigned reinspection personnel shall complete required indoctrination & training prior to performing quality related activites. Indoctrination includes a closed book written examination containing at least (10) questions ...."

Finding: The indoctrination exams taken by E. Shevlin & D. Burlison on 8/22/84 had also been approved by these same individuals on the BCAP Inspection Test Approval Sheet on 8/9/84.

REPLY REQUESTED BY: October 12, 1984
DATE

9. REPLY

REPLY PAGE 1 OF

CAUSE:

ACTION TAKEN TO CORRECT:

ACTION TO PREVENT RECURRENCE:

DATE FOR FULL COMPLIANCE:

RESPONSIBLE REPRESENTATIVE _____ DATE _____

10. VERIFICATION

REPLY BY ADDRESSEE IS SATISFACTORY

AUDITOR _____ DATE _____

ACTION TAKEN IS SATISFACTORY

AUDITOR _____ DATE _____

EVALUATION RESEARCH CORPORATION

AUDIT ACTION REQUEST
#84-102-2

1. COMPANY/ACTIVITY Commonwealth Edison Company Braidwood Construction Assessment Program	2. REPORT NO. ERC 84-102 DATE 9/27/84
3. AUDITOR J. E. Young J. E. Young 9/27/84	4. DISCUSSED WITH M. Clinton
5. RESPONSIBLE MANAGER N. Kaushal	6. LOCATION Qual. & Cert. of Reinspection Personnel
7. REQUIREMENT BCAP-08 Rev.0 Para 3.11.1	

8. FINDING

PAGE 1 OF

Requirement: Questions will be reviewed and approved by applicable Level III Inspection. Lead, Certification/Training Administrator and a CECo QA representative prior to being included in the examination banks. Examination banks shall include a minimum of eighty questions."

Finding: At the time of the review, only (71) questions exist in a BCAP General Exam Bank. Also, the questions were reviewed & approved by E. Shevlin & D. Burlison who were not certified Level III Inspection Leads.

REPLY REQUESTED BY: October 12, 1984
DATE

9. REPLY

REPLY PAGE 1 OF

CAUSE:

ACTION TAKEN TO CORRECT:

ACTION TO PREVENT RECURRENCE:

DATE FOR FULL COMPLIANCE:

RESPONSIBLE REPRESENTATIVE _____ DATE _____

10. VERIFICATION

REPLY BY ADDRESSEE IS SATISFACTORY

AUDITOR _____ DATE _____

ACTION TAKEN IS SATISFACTORY

AUDITOR _____ DATE _____

EVALUATION RESEARCH CORPORATION

AUDIT ACTION REQUEST
#84-102-3

1. COMPANY/ACTIVITY
Commonwealth Edison Company
Braidwood Construction Assessment Program

2. REPORT NO. ERC 84-102

DATE 9/27/84

3. AUDITOR
J. E. Young J E Young 9/27/84

4. DISCUSSED WITH
M. Clinton

5. RESPONSIBLE MANAGER
N. Kaushal

6. LOCATION Qual. & Cert. of Reinspection Personnel

7. REQUIREMENT
BCAP-08 Rev. 0 Para 3.13

8. FINDING

PAGE 1 OF

Requirement: "Training Lesson Plans will be reviewed & approved by the applicable Level III Inspection Lead, ..."

Finding: Training Lesson Plans were approved by D. Burlison, J. Sexton & E. Shevlin, who were not certified Level III Inspection Leads.

REPLY REQUESTED BY: October 12, 1984
DATE

9. REPLY

REPLY PAGE 1 OF

CAUSE:

ACTION TAKEN TO CORRECT:

ACTION TO PREVENT RECURRENCE:

DATE FOR FULL COMPLIANCE:

RESPONSIBLE REPRESENTATIVE _____ DATE _____

10. VERIFICATION

REPLY BY ADDRESSEE IS SATISFACTORY

AUDITOR _____ DATE _____

ACTION TAKEN IS SATISFACTORY

AUDITOR _____ DATE _____

EVALUATION RESEARCH CORPORATION

AUDIT ACTION REQUEST

#84-102-4

1. COMPANY/ACTIVITY Commonwealth Edison Company Braidwood Construction Assessment Program	2. REPORT NO. ERC 84-102 DATE 9/27/84
3. AUDITOR J. E. Young J. E. Young 9/27/84	4. DISCUSSED WITH M. Clinton
5. RESPONSIBLE MANAGER N. Kaushal	6. LOCATION Qual. & Cert. of Reinspection Personnel

7. REQUIREMENT
BCAP-08 Rev.0 Appendix V

8. FINDING

PAGE 1 OF

Requirement: Appendix V, Section II, requires that a minimum (40) questions, closed book, area exam shall be given for certification of Level II Inspection Personnel

Finding: During the audit, a review of exam banks indicated there were no area exams.

REPLY REQUESTED BY: October 12, 1984
DATE

9. REPLY

REPLY PAGE 1 OF

CAUSE:

ACTION TAKEN TO CORRECT:

ACTION TO PREVENT RECURRENCE:

DATE FOR FULL COMPLIANCE:

RESPONSIBLE REPRESENTATIVE _____ DATE _____

10. VERIFICATION

REPLY BY ADDRESSEE IS SATISFACTORY

AUDITOR _____ DATE _____

ACTION TAKEN IS SATISFACTORY

AUDITOR _____ DATE _____