Bechtel Power Corporation
Engineers—Constructors

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July 19, 1984

BLI-08

Mr. J. D. Geier
Illinois Power Company
500 South 27th St.
Decatur, Illinois 52525

Subject: Clinton Independent Design Review
Illinois Power Company
Job No. 15478-003
Program Plan July 1984, (Rev. 1)

Dear Mr. Geier:

As requested, we are enclosing our Revision 1 of the subject Program Plan, revised to incorporate the elements of the list attached to your letter of July 17, 1984 to our C. W. Dick. Please note, resumes are not included with this revision since they have not changed from the submittal of the original issue of the Plan on July 10.

We appreciate your approval at your earliest convenience.

Very truly yours,

for G. L. Parkinson
Project Manager

GP/mp
Attachment

cc: M. Axelrad, w/att.
D. P. Hall, w/att.
R. C. Heider, w/att.
J. Keppler, w/att.
R. Knop, w/att.
J. Milhoan, w/att.
B. L. Siegel, w/att.
C. D. Fox, w/att.
Service List, w/att.

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ADD: NSIC
B. SIEGEL, MS 444

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PDR ADOCK 05000461
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PROGRAM PLAN

INDEPENDENT DESIGN REVIEW

OF

CLINTON POWER STATION, UNIT 1

Prepared for

Illinois Power Company

Decatur, Illinois

Approved by _____ Date 7/19/84
Project Manager

Concurrence by _____ Date 7/19/84
Programs Manager

_____ Date 7/19/84
Manager of Engineering, BPC

Bechtel Power Corporation
San Francisco, California
July 1984

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CLINTON POWER STATION
INDEPENDENT DESIGN REVIEW PROGRAM PLAN

(1434o)

GLOSSARY

Observation - A condition wherein the IDR, Level-1 Committee believes there is a failure to meet licensing commitments or other safety-related design requirements

Potential Observation Report - A preliminary internal report for the documentation of an Observation

Observation Report - Level-1 Internal Review Committee documentation of its evaluation of an Observation

Resolution Report - Documentation of the resolution of an Observation

Completion Report - Documentation of action taken (disposition) to complete the review effort associated with an Observation

Level-1 Internal Review Committee - A committee made up of key IDR team members

Level-2 Internal Review Committee - A committee made up of senior members of Bechtel Power Corporation who are not part of the IDR team

Safety Significant Condition - A condition confirmed to exist which results in a loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety

Program Plan
Independent Design Review
of
Clinton Power Station, Unit 1

I. Introduction and Summary

This Program Plan defines the program for the independent design review (IDR) by Bechtel Power Corporation (BPC) of specified activities related to design of Unit 1 of the Clinton Power Station of Illinois Power Company (IP). The IDR will mainly cover work by Sargent & Lundy Engineers (S&L), but will also include Reactor Controls Inc. (RCI). Work by other design contractors may also be evaluated when they have performed design which is part of the specified activities, and where there is evidence this could be important to results of the review. This Program Description is intended to be fully responsive to the requirements set forth in the letter of May 31, 1984 from Mr. D. P. Hall of Illinois Power Company to Mr. J. G. Keppler of the NRC, and the letter of June 19, 1984 from Mr. D. P. Hall to Mr. Peter Karpa of Bechtel Power Corporation.

The purpose of this design review will be to provide additional assurance that the design of the Clinton Power Station meets licensing requirements, through a review of the technical adequacy of selected systems and the design process (i.e., design control). Both vertical and horizontal-type reviews will be employed. For the vertical review, two systems have been selected: the high pressure core spray (HPCS) and the Class 1E ac electrical distribution system. For the horizontal review,

the adequacy of the design process on Clinton will be reviewed using as a data base the results of review reports on Byron, La Salle, and Fermi stations, and other information from previous reviews by IP and others.

From the vertical and horizontal reviews, an assessment will be made both of the adequacy of the systems reviewed and of areas of the plant design which were not specifically reviewed, including positive aspects of the design work. Where appropriate, deficiencies identified will be evaluated for underlying, root causes.

The program for the review of each system is divided into the tasks listed below.

Task 1	Design Requirements
Task 2	Design Adequacy
Task 3	Design Process
Task 4	General Assessment

Each of these tasks is described in more detail in the respective sections and is intended to incorporate all of the IDR work described in the May 31 letter and its Attachment 2, and to reflect results of the June 28, 1984 meeting with the NRC in Bethesda, Maryland. For editorial simplification, S&L is referred to as the reviewee, but it is understood that there may be others as well, and this program will apply similarly to them.

The review will be performed by a dedicated project team, comprised of qualified personnel from Bechtel Power Corporation. The work will be performed under the direct surveillance of the Manager of Engineering, Bechtel Power Corporation to whom the Programs Manager and the Project Manager of the review team will report for project direction. The majority of the review team will be comprised of personnel from Bechtel's San Francisco Power Division and the Corporate group, but there will be some individuals drawn from other Bechtel entities when beneficial to the effort. Most activities of the team will be physically divided between the Chicago offices of S&L, the Clinton site, and Bechtel offices in San Francisco, to expeditiously achieve the objectives of the review.

A formal protocol will be observed for IDR activities to achieve reviewer independence and freedom from outside influence, on the scope of a reviewer's work, on observations and/or conclusions. Also, this protocol will provide for access to results of the IDR by authorized outside parties, including participants in the licensing proceedings. A copy of the protocol is provided in Appendix A.

There are no known conflicts of interest by Bechtel Power Corporation, or by individuals on the IDR team, which would prevent this review team from arriving at objective conclusions from the review, or which would otherwise compromise the purposes of the review. To support this and the NRC independence criteria[1], each member of the IDR team will be required to execute an IDR agreement and an IDR questionnaire. Copies of the agreement and questionnaire are included in Appendix A.

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(1) Exhibit 2 to June 22, 1984 letter, A. Swencer to D.P. Hall, titled IDVP Independence Criteria

Also, BPC will execute appropriate corresponding documents for the Corporation.

Work will be scheduled for an interim report to be submitted by September 30, 1984, a draft final report by November 16, 1984, and a final report by approximately December 15, 1984.

The Bechtel work will be performed under the requirements of its Corporate quality assurance program (BQ-TOP-1, Rev. 3A), which has been approved by the NRC. Implementing procedures will comply with the applicable requirements of the quality assurance program, and some will be based upon the standard Bechtel Engineering Department Procedures (EDPs). The quality assurance program for the IDR is described in Appendix B, and will be implemented in accordance with approved procedures. Applicable portions used in the IDR will be discussed in the Final Report.

II. Task Descriptions

The tasks described here have been organized to allow a thorough review of the specified systems and the design process reviews listed below. Upon completion of the review, conclusions will be drawn appropriate to the objectives and commensurate with the review work performed.

Subjects reviewed will be as follows:

High pressure core spray (HPCS) system design.

Class 1E ac electrical system design.

Design review reports from Clinton and other relevant designs.

System boundaries will be as generally described in the FSAR. The review will cover mechanical, electrical, environmental, instrumentation and control, plant arrangements, and fluid system aspects of the design of each system, as well as relevant nuclear engineering and structural design. For the Class 1E ac electrical system, the review will specifically include the medium voltage part of the safety-related system, but BPC will have the option to delete all or part of the low voltage system if, in BPC judgement, this will not add importantly to the results.

The design process will be evaluated by assessing the Clinton-specific work, as well as reports of similar reviews of other, relevant designs by S&L, including those previously identified. This will be accomplished through the techniques of both horizontal and vertical reviews, as subsequently described.

The extent to which reports of these other reviews will be used will be determined by their relevance to Clinton, availability of reports (i.e., public domain), and overall value to assessing effectiveness of the S&L design process on Clinton. At present, it is contemplated that the IDR will review Integrated Design Inspection (IDI) reports by the NRC, and independent design review reports by other reviewing organizations. The public-domain responses to these reports will be included. Also, results of previous IP-sponsored reviews of Clinton will be specifically evaluated, including that by INPO. In addition to other reports for S&L designs, RCI design work will also be considered, using the Integrated Design Inspection by the NRC for River Bend Nuclear Station. The purpose will be to determine if the findings have any relationship to RCI design work at Clinton, and to determine if the findings have been appropriately taken into account at Clinton.

The extent of the review in any given area will be determined by the review team, on the basis of the importance to safety of the area and what is found during the review. If the review detects deficiencies, then the area will be reviewed more intensively than otherwise. Special effort will be directed to determining root or basic causes for significant or recurring deficiencies.

For convenience of identifying separate review activities, the review of each system has been divided into the four tasks. In practice, however, they will be integrated and performed as a relatively continuous activity for each discrete piece of the design. That is, each design area being reviewed will (1) have its requirements established, (2) be reviewed for technical adequacy, (3) have the design process assessed during the review for adequacy, and (4) be incorporated into the evaluation of broader implications. These are the basic Tasks previously identified. In organizing the work and reports, some Tasks will be further subdivided to focus on areas of special interest. The relationship of Tasks to subjects and design areas for review is shown in Table 1.

The scope of work in this Program is established with the objective of being broad enough to permit BPC to reach meaningful conclusions regarding the overall adequacy of the Clinton design. However, BPC will promptly inform IP and the NRC if, at any time, BPC determines that accomplishing this objective requires expansion of the reviews.

TABLE 1

REVIEW SUBJECTS vs. TASKS

REVIEW (1) SUBJECTS	TASKS: Licensing Requirements	Design Adequacy	Design Process	Design Interface w/GE & Other	Design Change Control	S&L Design Reviews	Common(2) Requirements	As-Built Control Walkdown
HPCS System								
Mech. Systems	x	x	x	x	x	x	x	x
Mech. Components	x	x	x	x	x	x	x	x
Civil - Structural	x	x	x	x	x	x	x	x
Electrical Power	x	x	x	x	x	x	x	x
Inst. & Control	x	x	x	x	x	x	x	x
Design System	x	x	-	x	x	x	x	x
Design Standards	x	x	-	-	-	-	x	x
Electrical System (1-E,ac)								
Electrical Systems	x	x	x	x	x	x	x	x
Electrical Components	x	x	x	x	x	x	x	x
Civil - Structural	x	x	x	x	x	x	x	x
Inst. & Control	x	x	x	x	x	x	x	x
Design System	x	x	-	x	x	x	x	x
Design Standards	x	x	-	-	-	-	x	x
Other Reviews								
Observations	x	x	x	x	x	x	x	-
Corrective actions	x	x	x	x	x	x	x	-
Root cause analysis	x	x	x	x	x	x	x	-

(See Notes for details)

Rev. 1

Table 1 (Cont)

NOTES

(1) Included in Review Subject areas are the following:

Mechanical Systems include process design, environmental and separation, requirements, and system descriptions

Mechanical Components includes stress analysis, piping design, pipe supports, environmental qualification and technical specifications

Civil-Structural includes seismic analysis, structural supports design, and seismic qualification

Instrumentation and Control includes control system design, separation, protection system, and annunciation

Electrical Systems includes system single-lines schematics wiring diagrams, cable separation and system descriptions

Electrical Components includes environmental qualification, technical specifications, and cable installations.

Design Systems includes procedures and other controls, design tools, and quality program

Design Standards includes standard drawings and requirements, interpretations of codes and standards and standard specifications.

(2) Common Requirements refers to design requirements for HELB/MELB, fire protection, and Class II-over-I design.

Task 1

Design Requirements

General

Task 1 will be to determine the extent to which design criteria or other design objectives match licensing commitments. These will be used to implement Tasks 2 and 3, and to assess how design inputs are specified.

The sources of the commitments will be the FSAR, IP responses to NRC questions on the FSAR, the SER and supplements thereto, as well as other documents BPC determines to be relevant.

Sub-Tasks

1A Establish checklists to perform Task 1.

1B Review FSAR and other documents to identify safety-related design criteria or other safety-related commitments and design requirements. This includes IP responses to NRC questions.

1C Review IP and S&L procedures for specifying design requirements.

Compare design requirements to the inputs used by S&L in developing designs or other documents, such as specifications. In doing this, due recognition will be given that there are many ways design requirements may be specified. Also, where interpretations of requirements are made, the justifications for apparent differences will be sought.

Effective dates for codes and standards will be confirmed.

1D Review engineering output documents, as appropriate, to determine if requirements are suitably reflected. These documents include procurement specifications and construction drawings.

1E Interview selected, key S&L personnel so that reviewers correctly understand how requirements are interpreted.

1F Identify and process potential Observations and incorporate results in the reports issued.

Task 2

Design Adequacy

General

Task 2 will be to review each of the selected systems for adequacy in meeting the licensing commitments and safety-related design requirements. These commitments and requirements will be those determined from Task 1. This will include a review of the installed (as-built) condition to compare actual configuration with that used in design.

To assess design adequacy, primary reliance will be placed on the results as described in output documents. It will be recognized there are many ways to arrive at an adequate design which meets requirements. No attempt will be made to re-verify each step in designing the specified systems. Instead, the designs will be reviewed for accurate inputs and reasonableness of outputs, and adequacy of the design techniques based on a review and sampling of the work. Independent calculations will be performed to the extent appropriate and in accordance with IDR team guidelines, to provide alternate means of verification or where proprietary methods are involved, but not as a general rule.

In judging accuracy and completeness of design documents, due recognition will be given to established professional engineering practices and other precedents established in the nuclear industry. This judgement will consider the level of detail needed to link design requirements with the output documents, and the process employed. It will also consider needs to justify design decisions and assumptions.

Sub-Tasks

2A Establish checklists to perform Task 2.

2B Assemble design requirements for the specified systems.

2C Review selected design documents for the following:

1. Safety classifications, to determine if the structures, systems, and components have been properly classified as to safety significance as defined in 10CFR50.
2. Accuracy and completeness of the design criteria and other inputs, including assumptions and codes or standards.
3. Applicability of standard design methods.
4. Method of analysis, to determine if an appropriate method was used, including mathematical models, and use of standards.
5. Engineering judgements and assumptions and the basis on which they were exercised and utilized.
6. Accuracy of implementing the analysis, including use of properly validated computer codes.
7. Adequacy of means by which designs were verified.
8. Translation of design into output documents, for completeness, clarity, and proper control.
9. Reasonableness of the output, in relation to similar designs.

In performing the above reviews, each system will be reviewed from the standpoint of an integrated design, properly coordinated between disciplines. It will include mechanical, electrical, nuclear, instrumentation and control, and civil/structural aspects of the design.

The last design revision will be considered as the basis of the review. This revision may be a field change request or other change notice. In-process work will be included, where appropriate. However, an April 1, 1984 cut-off date will be established to permit valid assessment of previous work.

2D Interview selected, key S&L personnel so that reviewers correctly understand how requirements are interpreted and implemented.

2E Field As-Built Review

To determine if the S&L design samples are configured in the manner for which they were qualified, an independent review of the as-built conditions will be made, by means of system walkdowns.

The purpose is to gain reasonable assurance that the characteristics used in the S&L design have been properly established and utilized, and to apply the criteria to the configuration as they were intended to be used during the licensing process.

The walkdown will visually verify that the selected components and piping have been installed in proper relative positions. The piping isometric walkdown will verify routing and support locations as well as general support arrangement. Selected components and supports will also be inspected to verify such details as relative sizes, weld types, fasteners, and attachments to the structure.

There is no intention for these walkdowns to include material selection and application, fabrication, examination and inspection, or the pre-service inspection requirements that may be applicable or the taking of detailed measurements.

2F Forward potential Observations resulting from the above to the Internal Review Committee, for review and processing.

Task 3

Design Process

General

Task 3 will be to provide an assessment of the effectiveness of the S&L design process based upon review of the specified systems and of other reviews. In performing this task, reviews will be made to evaluate the extent to which the design process is sufficiently controlled so that safety-related design requirements are met, and that relevant commitments in the FSAR are complied with. This includes both establishment of suitable controls and implementation of them. In the event there are activities for which procedures were not followed (e.g., not available, deviation from procedures, or no commitment), the actual practices used will be evaluated.

In making this assessment, due consideration will be given to the extent to which engineering judgement is appropriate, in lieu of written procedures. Recognition will be made of the complexity of the work, how unique it is, qualifications of personnel performing it, and other rele ant factors.

Care will be taken to establish the time-frame of the design to ensure correct applicability of changing requirements.

Sub-Tasks

3A Establish checklists to perform Task 3.

3B Review FSAR, S&L procedures (including its QA program), and referenced documents to identify requirements for the design process.

3C Analyze reports of reviews and inspections of S&L designs for applicability to Clinton.

To use the results from other reports on Clinton, the following steps will be taken:

1. Key elements of the Clinton design process will be identified.
2. Other reports will be reviewed.
3. Reported observations will be tabulated.
4. Tabulations will be analyzed, trended, and correlated.
5. Results will be compared to similar conditions at Clinton, and the Clinton process assessed to determine how it relates. Areas of concern will be identified and evaluated for Clinton.
6. Root causes of deficiencies identified elsewhere will be individually evaluated to determine if they have been considered in the Clinton design process.

3D Interview selected, key S&L personnel so that reviewers correctly understand how requirements are interpreted and implemented.

3E Develop flow charts for design of the specified systems.

3F Review selected documents in the specified systems for adequacy and completeness of procedural requirements, and for general effectiveness of parts of the process reviewed. Where procedural requirements are not available, the actual process will be evaluated to determine the extent to which the design is adequately controlled.

Documents reviewed will include those related to design criteria, calculations (both by hand and computer), drawings, specifications, and design change authorizations.

The documents will be reviewed for elements which include the following:

1. Adequacy of documentation of the design calculations.

2. Interface design control between S&L and General Electric, and other important design contractors.

3. Design change and configuration controls including use of Field Change Requests (FCRs), Non-Conformance Reports (NCRs) and Engineering Change Notices (ECNs).

4. Design reviews performed by S&L, covering the specified systems, for technical adequacy.

5. As-built drawing reviews to determine degree of compliance with procedures, timeliness of release, and accuracy of information. Performed in conjunction with the system walkdown activity.

6. Such other elements related to design control which are embodied in the FSAR and its referenced documents.

3G Forward potential Observations resulting from the above to the Internal Review Committee for review and processing.

Task 4

General Assessment

General

In Task 4, the results of Tasks 2 and 3 will be assembled and analyzed to determine what conclusions can be drawn regarding systems, structures and components which were not reviewed.

This analysis will be performed near the end of the review, using all available information, recognizing that conclusions must be commensurate with the nature of what was reviewed.

A balanced assessment will be sought, and one which emphasizes the likely impact on safety from observations made. As such, both positive and negative results will be considered, and the significance of all of them will be weighed.

Sub-Tasks

4A Consolidate all observations into a summary list.

4B Analyze the list in 4A for trends and underlying root causes, and possible implications for unreviewed, safety-related areas. As appropriate, this will include identification of underlying causes for possible individual deficiencies identified, and S&L will be expected to investigate possible deficiencies in systems or areas outside the scope of the review.

4C Report those broader conclusions commensurate with what was actually reviewed.

III. Processing of Observations

In the event that the review of the specified systems reveals certain design activities which are not accepted by the reviewer, such as potential discrepancies, they will be termed Observations and processed in accordance with an established procedure.

The program for processing will seek to ensure that the Observations made as a result of the review are fully understood, validated, evaluated as to safety-significance, and closed-out through appropriate corrective action. Accordingly, provision is made for complete investigation and examination by Bechtel (Reviewer). To this end, two internal review committees will be established within the Reviewer's organization.

It is also intended that the results of the processing will not be compromised by any lack of independence of the Reviewer. Accordingly, the functions of IP (Owner) and of S&L (Engineer) are essentially restricted to providing information and otherwise clarifying the basis of design while Observations are being considered. Resolution required as a result of Observations will be mutually agreed to by the Owner, Engineer, and Reviewer. If corrective action is required, it will be implemented by the Engineer.

Key steps in processing of potential Observations, all the way to close-out by Reviewer, are shown in Table 2. At any point, however, the processing may be terminated and the Observation closed-out, if Reviewer determines no reporting or other action is appropriate.

TABLE 2

PROCESSING OF OBSERVATIONS

	Activity	Responsibility
1.	Item discussed in detail with cognizant personnel.	E, R
2.	Potential Observation developed during review and forwarded to Level - 1 Internal Review Committee.	R
3.	Level - 1 Internal Review Committee confirms Observation is valid.	R
4.	Notification to S&L and IP of potertial safety significant items.	R
5.	For other accurate but non-safety significant items, process as in Steps 9, 10 and 11. For invalid items, process as in Step 9.	E, R
6.	For potential safety significant items Level - 2 Internal Review Committee confirms Observation. Confirms if safety significant.	R
7.	Prompt notification to IP for safety significant items.	R
8.	For safety-significant and for other accurate but non-safety significant items, process as in Steps 9, 10 and 11. For invalid items, process as in Step 9.	E, R
9.	Report issued.	R
10.	Response made, including proposed corrective action, if appropriate.	E
11.	Corrective action proposal accepted.	R
12.	Monitoring of above activities	O

KEY

E - Engineer
O - Owner
R - Reviewer

IV. Reports and Documentation

One interim report is planned, describing overall results of the work to date, and including a description of the review program. Also, a final report will be issued covering results of all work performed and including broader conclusions which can be drawn on areas not reviewed.

Reports on individual Observations will be issued when they are confirmed by the Level-1 or Level-2 Internal Review Committee in accordance with Section III. This will be done promptly to permit responses to be immediately initiated and corrective action begun. A standard form will be used for these reports.

The interim and final reports will be issued to IP with copies to S&L and others specified by IP.

A copy of all summary calculations and other documentation which support the individual, interim, and final reports will be provided to IP.

V. Organization

The review will be performed by a Review Team, mostly comprised of senior engineering and project management personnel from Bechtel Power Corporation.

The work of the Review Team will be under the overall direction of the Manager of Engineering, Bechtel Power Corporation. The Programs Manager

will provide direction on matters of program interpretation and implementation, and planning, and coordinate related work with other reviews. The day-to-day activities, however, will be managed by its Project Manager, who reports to the Programs Manager. The Project Manager also receives direction from designated management representatives of Illinois Power Company under terms of the contract and to the extent permitted by this Program Plan.

Organization of the Review Team is shown on Figure 1.

The team is comprised of groups organized around the areas to be reviewed. Each group, led by an experienced individual, is responsible for performing all the identified tasks for the respective area.

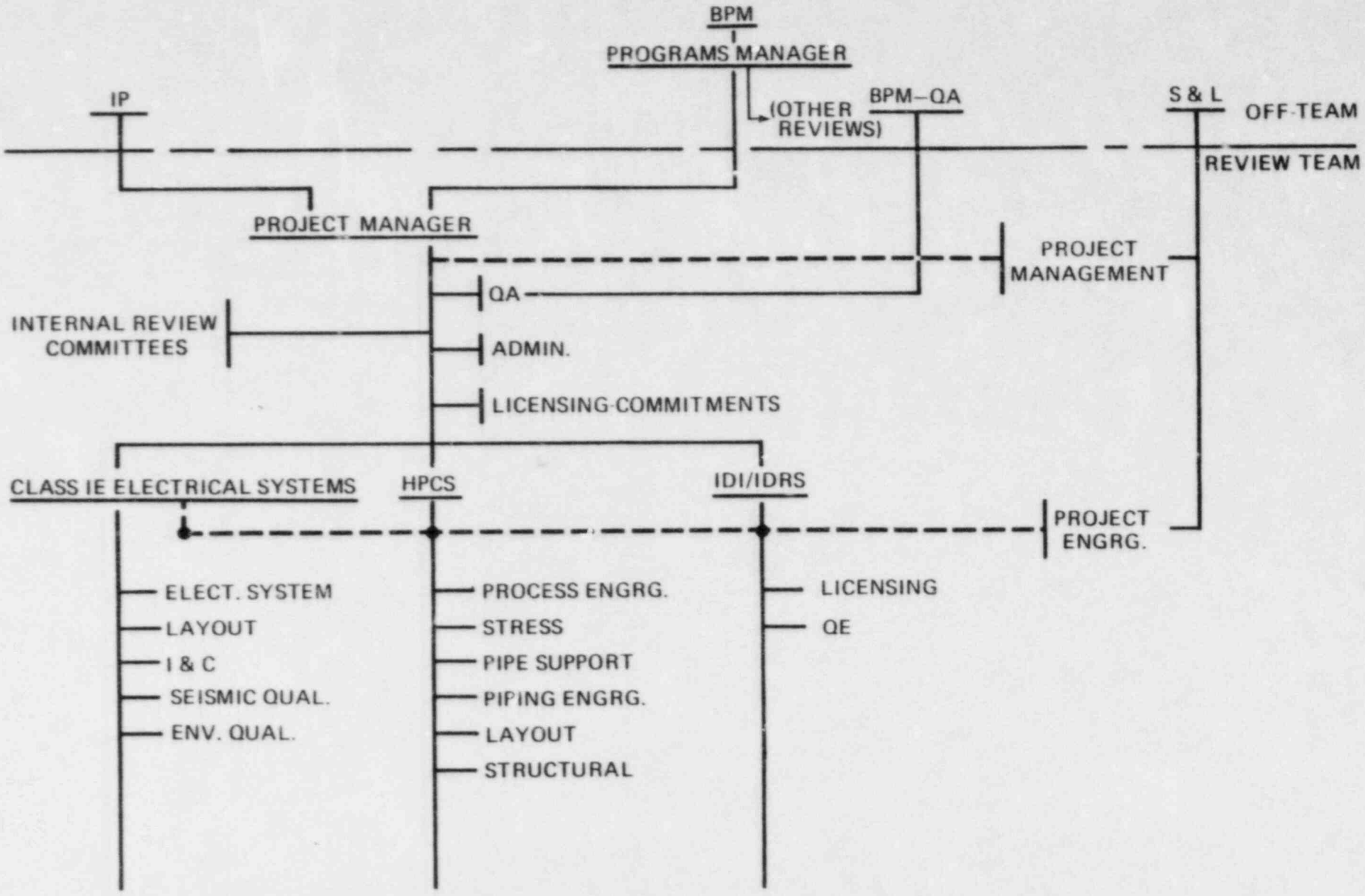
Members of the groups have been carefully selected to assure qualified, objective, and balanced assessments of what is reviewed. In some cases, individuals may serve in two or more System Groups, as the workload requires. In all cases, their review work will be carefully monitored by management of the Review Team.

The necessary technical expertise will be represented within the Review Team. Special expertise is available from elsewhere in Bechtel when required for technical support including consultation. Current membership of the Review Team and Review Committees is shown on the Clinton Review Roster in Table 3; however, needed changes may be made from time-to-time.

FIGURE-1

IDR TEAM

CLINTON POWER STATION



DIRECTION

COMMUNICATION

NOTE: EACH SYSTEM GROUP PROVIDES SERVICES TO OTHERS, AS REQUIRED.

Quality Assurance surveillance will be by an assigned Quality Assurance Engineer, who will report directly to the Manager of Quality Assurance, Bechtel Power Corporation.

Team-wide support will be provided in the areas of licensing commitments and administration by individuals reporting to the Project Manager.

Qualifications of Bechtel Power Corporation for design review work are summarized in Appendix C. Resumes of key members of the Review Team and of the Review Committees are included in Appendix D. Qualifications will also be submitted in the Final Report, covering personnel on the IDR team who had significant roles in the IDR related to management, technical, or quality activities.

TABLE 3

CLINTON REVIEW ROSTER

Corporate Management	
P. Karpa	Management Sponsor
J. M. Amaral	Quality Assurance Management
Review Team Staff	
C. W. Dick	Programs Manager
G. L. Parkinson	Project Manager
R. S. Cahn	Licensing - Commitments
K. G. Purcell	Administrator
D. B. Hardie	Quality Engineering
D. L. Lubin	Technical Editor
D. W. Wolfe	Quality Assurance Engineer
System Groups	
A. M. Appleford	Structural Engineering
R. S. Cahn	IDI/IDR Review Leader
A. W. Davis	I & C Engineering
C. M. Hazari	Electrical System Engineer
W. R. Hintz	Stress Engineering
A. T. Jocson	Process Design
C. W. Jordan	Electrical Systems Group Leader
R. J. Lodwick	Process Design
W. D. Lowe	Plant Design
A. S. Meyers	Piping Engineering
M. G. Michail	Structural Engineering
R. S. Powell	HPCS Systems Group Leader
H. Shah	Pipe Support Design
B. S. Shicker	Structural Engineering
J. A. Shoulders	Process Design
L. S. Spensko	Quality Engineering
J. M. Strohm	Environmental Qualification
A. Valachovic, Jr.	Fire Protection
C. R. Whitehurst	Seismic Qualification
G. K. Young	Electrical Systems Engineering
Level-1 Internal Review Committee	
R. S. Cahn	IDI/IDR Review Leader
C. W. Dick	Programs Manager
D. B. Hardie	Quality Engineering
C. W. Jordan	Electrical System Group Leader
G. L. Parkinson	Project Manager
R. S. Powell	System Group Leader
Level-2 Internal Review Committee	
S. A. Bernsen	Project Manager, BPC
A. L. Cahn	Bechtel Power Management Consultant
R. P. Schmitz	Chief Nuclear Engineer, BPC

VI. Schedule

Review work will be keyed to the target milestone dates shown below:

June 15, 1984	Begin Preliminary Work
September 30, 1984	Issue Interim Report
November 16, 1984	Issue Draft Final Report
December 15, 1984	Issue Final Report

More detailed schedules will be developed after initial reviews have taken place. However, it is not expected that the nature of the work will permit the detail of scheduling that is normally performed on a design-construction project, primarily because the nature and number of Observations are not known in advance. The schedules will include proposed start of formal design review, estimated bounding dates for IDR activities, and issuance of the Final Report.

The date for the Interim Report will be considered firm, and the results of work performed to that date will be reported.

The date for the Final Report will be considered as a target date, which may be adjusted several weeks earlier or later, depending on progress and results of the review. In the event that ongoing work justifies completion and limited additional time is needed, the completion date may be delayed. Likewise, every reasonable effort will be made to complete the review in the shortest possible time, consistent with achieving objectives of the review.

The overall guidelines to be employed will be to complete sufficient review work to produce a Final Report, which will not require further review work by the Reviewer or others.

APPENDIX A

PROTOCOL AND FORMS

PROTOCOL GOVERNING CONDUCT OF INDEPENDENT DESIGN REVIEW (IDR) OF CLINTON POWER STATION (CPS)

In the conduct of the IDR by Bechtel Power Corporation (BPC), the following protocol shall be adhered to:

1. Recommendations, findings, evaluations and all exchange of correspondence, including drafts, between BPC and Illinois Power Company (IP) (including its contractors and subcontractors) will be submitted to the Director, Division of Licensing, Office of Nuclear Reactor Regulation (Director) at the same time as they are submitted to IP.

2. BPC may request documentary material, meet with and interview individuals, conduct telephone conversations, or visit the site to obtain information without prior notification to the NRC. All communications and transmittals of information shall, however, be documented and such documentation shall be maintained in a location accessible for NRC examination. Communications between BPC and IP solely with respect to the financial and administrative aspects of the IDR contract are outside the scope of this protocol.

3. If BPC wishes to discuss with IP substantive matters related to information obtained, to provide an interim report to IP, or to discuss its findings or conclusions with IP in advance of completing its report, or if IP desires such communication, such discussions shall be accomplished in meetings open to public observation. In this regard, IP shall provide a minimum of five days advance notice to the Director of any such meeting. The Director shall make reasonable efforts to notify representatives of interested members of the public of the meeting, but the inability of any such person to attend shall not be cause for delay or postponement of the meeting. Transcripts or written minutes of all such meetings should be prepared by the organization requesting the meeting and provided to the NRC in a timely manner. Any portion of such meetings which deals with proprietary information may be closed to the public.

4. All meetings between the Staff and IP and/or BPC will be open to public observation, except where the Staff determines that it is appropriate to conduct a meeting(s) in private with IP and/or BPC.

5. All documents submitted to, or transmitted by, the NRC subject to this protocol, unless exempt from mandatory public disclosure, will be placed in the NRC Public Document Rooms in Clinton, Illinois, and Washington, D.C., and will be available there for public examination and copying.

CLINTON IDR

PERSONNEL QUESTIONNAIRE

After first being duly sworn _____ hereby deposes and says:
(print or type name)

1. I have no previous involvement with the Clinton Project, except as noted on the reverse side.

2. I have not previously been hired by IP, Sargent & Lundy (S&L), or a Clinton site contractor (Baldwin Associates, General Electric or any other contractor) to perform similar audits, except as noted on the reverse side.

3. I have not been previously employed by IP, S&L, or a Clinton site contractor, except as noted on the reverse side.

4. I do not own or control stock of IP, S&L, or a Clinton site contractor, except as noted on the reverse side.

5. No member of my present household is employed by IP, S&L, or a Clinton site contractor, except as noted on the reverse side.

6. None of my relatives is employed by IP, S&L, or a Clinton site contractor, except as noted on the reverse side.

7. I have not been offered future employment by IP, S&L, or a Clinton site contractor, except as noted on the reverse side.

I hereby affirm that the above is true and correct to the best of my knowledge.

_____ _____
(Signature) (date)

Subscribed and sworn to before me on this _____ day

of _____, 1984.

My commission expires: _____ _____
Notary Public

AGREEMENT CONCERNING INDEPENDENT DESIGN REVIEW OF CLINTON POWER STATION

I _____ (print or type name)
hereby agree that:

1) I will notify the Team Leader if during the term of this project I, or any member of my immediate family (parents, spouse, children and grandchildren) acquire any financial interest in Illinois Power Company. Sargent & Lundy or any site contractor at the Clinton Power Station (Baldwin Associates, General Electric Company).

2) If I identify what I believe to be a potential discrepancy having the potential for a significant safety impact, I will immediately notify the Team Leader for further evaluation.

3) I will treat information revealed to me in the course of my work on this project as confidential and will not disclose it to others not involved in the project except as directed by the Team Leader.

_____ (Signature)

_____ (Date)

APPENDIX B

QUALITY ASSURANCE PROGRAM