

REPORT FOR
THE SOUTH TEXAS PROJECT
COA v. HL&P
LITIGATION RECORD REVIEW PROGRAM
(PHASE II)

Prepared for:
HOUSTON LIGHTING & POWER COMPANY

March 1989



S. LEVY, INCORPORATED

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EXECUTIVE SUMMARY

This report of the City of Austin v. Houston Lighting & Power (COA v. HL&P) Litigation Record Review Program documents the results and conclusions reached following a systematic review of the pretrial record created between July 25, 1988 and January 16, 1989 (Phase II) during the litigation between the City of Austin and Houston Lighting & Power Company (HL&P) and its parent Houston Industries, Inc. The review of the portion of the pretrial record created prior to July 25, 1988 (Phase I) was previously documented in a report dated November 1988. The object of the review was twofold: 1) to examine the litigation record to determine whether it discloses any previously unidentified safety-related deficiency in the systems, structures, or components of the South Texas Project (STP) or their associated design or quality documents; and 2) to document the review process and its results in a retrievable form. To do this, record documents containing factual information relating to technical aspects of the design and construction--that is, deposition transcripts and documents designated by the parties as potential trial exhibits--were reviewed.

The review was performed in two stages. First, Houston Lighting & Power Company employed a screening process to determine which depositions, interrogatories, requests for admissions, affidavits and exhibits attached to motions for summary judgment or designated as trial exhibits might contain information about technical aspects of South Texas Project design or construction. Those documents, totaling approximately 3000 pages, were then transmitted to S. Levy Incorporated for detailed review.

The second stage of the review process consisted of a detailed, line-by-line review by S. Levy Incorporated of all documents identified during the screening process. S. Levy Incorporated recorded each assertion in these documents which described a deficiency in South Texas Project systems, structures, or components; classes of systems, structures, or components; processes relating to specific systems, structures, or

components; overall South Texas Project site data; or related design or quality documents. A total of 127 assertions was identified. These assertions were then analyzed to determine whether they: 1) had already been identified and dispositioned in either the HL&P v. B&R Litigation Record Review Program or Phase I of the COA v. HL&P Litigation Record Review Program; 2) were not safety-related (and would not adversely affect the operation of safety-related systems, structures, or components); 3) had already been identified by the South Texas Project; or 4) were factually erroneous. The work of identifying and analyzing assertions was performed by engineers experienced in the nuclear power industry, including a number who were specifically knowledgeable about design and construction of the South Texas Project.

The 127 assertions were disposed of as follows: 1) the substance of 91 was determined to have already been identified and dispositioned in the HL&P v. B&R Litigation Record Review Program or Phase I of the COA v. HL&P Litigation Record Review Program; 2) 7 were determined not to be safety-related; 3) the substance of 28 was shown to have already been identified by the South Texas Project; and 4) 1 was determined to be factually erroneous. This COA v. HL&P Litigation Record Review Program disclosed no safety-related deficiencies which had not already been identified for resolution by the South Texas Project. Had such a deficiency been found, HL&P would have been formally notified and HL&P would have dispositioned the assertion under its procedures. The absence of previously unidentified safety-related deficiencies was not surprising in light of the history of comprehensive reviews of the South Texas Project design and construction.

The conduct of the Litigation Record Review Program was controlled by plans and procedures. A Senior Advisory Panel reviewed the plans for Phase II and the results of Phase II. The program was also monitored by S. Levy Incorporated's Corporate Quality Assurance staff. Finally, there was one Quality Control audit conducted by Houston Lighting & Power Company's Nuclear Assurance personnel. The comprehensive scrutiny of the Litigation

Record Review Program by these groups has assured that Phase II was performed according to its procedures and that its results are accurate.

In conclusion, Phase II of the COA v. HL&P Litigation Record Review Program was a detailed, systematic examination of those portions of the litigation record which were likely to contain assertions of deficiencies in systems, structures, or components and their associated design or quality documents. The review did not disclose any previously unrecognized safety-related deficiencies in the South Texas Project's systems, structures, or components. The results of the review demonstrate that any safety-related deficiencies that were asserted in the litigation record for Phase II have already been identified by the South Texas Project, including Bechtel Power Corporation, Ebasco Services Incorporated, or Houston Lighting & Power Company. This demonstration underscores the success of the earlier intensive reviews performed on the South Texas Project.

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SECTION 1
INTRODUCTION

Houston Lighting & Power Company (HL&P), as the co-applicant responsible for the licensing of STP, has undertaken a review of the City of Austin v. Houston Lighting & Power (COA v. HL&P) litigation record as reflected in the discovery materials filed with the Court. The goal of the current Litigation Record Review Program is to determine whether the record in the COA v. HL&P litigation discloses some safety-related deficiency in the design or construction of STP systems, structures, or components (SSC) or in their associated design or in quality documentation which was not previously identified. Phase I of this review, encompassing the litigation record filed with the Court prior to July 25, 1988, has been completed and documented in a report dated November 1988. This report documents Phase II of this review which encompasses discovery material filed with the Court between July 25, 1988 and January 16, 1989.

The review was conducted in two stages. First, a screening process was employed by HL&P to identify those litigation record documents that might contain technical information concerning STP SSC. Any such documents were then reviewed in detail by experienced engineers employed by S. Levy Incorporated (SLI), who identified any assertions of deficiency in these documents with respect to STP SSC pursuant to detailed procedures and criteria. The SLI review process was conducted under the surveillance of SLI and HL&P personnel and was conducted in accordance with the SLI Quality Assurance (QA) program and monitored by HL&P in accordance with its QA program.

The overall program to review the litigation record for COA v. HL&P (Phases I and II) has required about three and one-half man-years of engineering effort. It has resulted in a completely auditable record, consisting of hard copy files, a computerized database, a report dated November 1988 (Phase I), and this report. This review of the COA v. HL&P

litigation record encompassed only materials filed with the Court between July 25, 1988 and January 16, 1989. Therefore, this report has been designated "Phase II". Previous filings with the Court were screened, reviewed, and documented under Phase I. Subsequent filings with the Court will be screened and reviewed beginning in March 1989. Results of subsequent screenings and reviews will be documented and reported to HL&P for transmittal to the Nuclear Regulatory Commission.

A. HISTORY OF THE SOUTH TEXAS PROJECT

For a discussion of the history of the South Texas Project which includes project background information, history of previous reviews of STP engineering and construction, and a discussion of the HL&P v. B&R litigation record review, see the report produced for Phase I entitled "Report for the South Texas Project COA v. HL&P Litigation Record Review Program (Phase I)" dated November 1988.

B. THE LITIGATION BETWEEN THE CITY OF AUSTIN AND HOUSTON LIGHTING & POWER COMPANY, ET AL.

For a discussion of the COA v. HL&P litigation which includes a brief history of the case, the litigation issues, and the types of materials produced by discovery, see the report produced for Phase I entitled "Report for the South Texas Project COA v. HL&P Litigation Record Review Program (Phase I)" dated November 1988.

C. HOUSTON LIGHTING & POWER COMPANY'S UNDERTAKING TO REVIEW RELEVANT PARTS OF THE LITIGATION RECORD

In 1988, it was determined that the record of the COA v. HL&P litigation should be examined to determine whether it contained information regarding any safety-related deficiencies in the STP design or construction

which had not previously been identified, and HL&P undertook a systematic review for this purpose.

A review program was proposed in a letter dated April 18, 1988 to the NRC Staff and the written program document was submitted to the NRC by letter dated September 30, 1988. The review began July 1988 and has required approximately 7000 man-hours of engineering effort by S. Levy Incorporated to complete Phases I and II. The results of Phase I of this review were documented in a report dated November 1988. The results of Phase II of the review are documented in this current report.

SECTION 2
PURPOSE OF THE LITIGATION RECORD REVIEW PROGRAM

The purpose of the COA v. HL&P STP Litigation Record Review Program was to determine whether the litigation record disclosed any previously unidentified safety-related deficiencies in STP systems, structures, or components or their associated design or quality documents. This review was not intended to duplicate previous extensive reviews of STP design and construction performed by HL&P, Bechtel, Ebasco, and other contractors, but to determine whether there was any new information embodied in documents generated for the litigation that revealed some safety-related deficiency which had not already been resolved or identified for resolution by the Project. The COA v. HL&P Litigation Record Review Program was designed to produce a complete and retrievable record of its performance and results.

SECTION 3

THE SCOPE OF THE COA v. HL&P LITIGATION RECORD REVIEW PROGRAM

A. OVERVIEW

A substantial record was generated during the COA v. HL&P litigation, portions of which are concerned with the technical adequacy of STP SSC. To assure that the materials prepared for the litigation do not disclose any safety-related deficiencies which have not already been identified by the South Texas Project including HL&P, Bechtel, or Ebasco, HL&P has reviewed such materials using a review process similar to that used in the review of the HL&P v. B&R litigation record. The litigation record and the review process are generally described below.

B. SCOPE OF PHASE II OF THE LITIGATION RECORD REVIEW PROGRAM

The types of documents which are found in the litigation record generated in COA v. HL&P are described in Section 3.B of the "Report for the South Texas Project COA v. HL&P Litigation Record Review Program (Phase I)" dated November 1988. One category (Affidavits and Exhibits) has been expanded as follows. As of the "cutoff" date for Phase I (July 25, 1988), only the plaintiff had designated trial exhibits. Subsequently, trial exhibits were designated by the defendant as well and these are now included in the category Affidavits and Exhibits.

During the period between July 25, 1988 and January 16, 1989 (the "cutoff" date for Phase II), some additional documents of the types described in Section 3.B of the Phase I Report were prepared or designated by the parties. Additionally, in some cases legible copies of previously prepared or designated documents first became available during this period.

As in Phase I, HL&P identified those documents most likely to contain information or insights, if any, with respect to potential deficiencies in the STP SSC. Those documents were selected from the categories of documents that were generated for purposes of litigation and were in the custody of the Court.

SECTION 4

METHODOLOGY AND PERFORMANCE OF THE LITIGATION RECORD REVIEW PROGRAM

The litigation record was reviewed in two stages. First, the interrogatories, requests for admissions, deposition transcripts, and affidavits and exhibits designated for use at trial or filed with motions for summary judgment were screened to identify those likely to contain technical information on the STP design, construction, or QA/QC. Second, those documents not eliminated during screening were reviewed line-by-line to identify any assertions of deficiencies in STP systems, structures, or components or their associated design or quality documents. Each statement determined to be an assertion was further examined to determine:

- 1) if the assertion had been previously identified in the review of the litigation records of HL&P v. B&R or Phase I of COA v. HL&P; or
- 2) whether the assertion is not safety-related -- that is, whether the asserted deficiency involves a safety-related SSC; or
- 3) if the assertion is determined to be safety-related, whether the Project has already resolved the matter covered by the assertion or identified it for resolution; or
- 4) whether the assertion is factually erroneous.

If the assertion was determined to be safety-related but had not been resolved or identified for resolution by the South Texas Project and could not be shown to be factually erroneous, litigation review Procedures required preparation of an STP Deficiency Evaluation Form (DEF) covering the substance of the assertion and transmittal of the DEF to HL&P's STP Project Engineering for evaluation in accordance with the applicable STP Procedures pursuant to 10 CFR 50.55(e) and 10 CFR 50.72. (A flowchart

showing an outline of the litigation record review process appears in Attachment 4-A.)

A. THE SCREENING PROCESS

1. The Purpose of Screening

As explained in Section 4.A of the "Report for the South Texas Project COA v. HL&P Litigation Record Review Program (Phase I)" dated November 1988, documents filed in the litigation were screened to ensure that those which might contain information related to technical aspects of the design or construction of STP SSC would receive detailed, line-by-line reviews.

2. Criteria and Methodology of the Screening Process

The Phase II screening was performed by two HL&P engineers and four attorneys. These individuals worked in two-person teams, each consisting of an attorney and an engineer familiar with the design of STP and with issues in the litigation. Using written criteria, the screening teams examined documents filed in the litigation to determine which would be included for detailed review by SLI. For each document which a screening team determined did not require review, a short statement was prepared explaining why the document should not be reviewed. The sheet upon which this statement appeared was signed by both members of the screening team. When there was any reasonable doubt as to whether a document should be included for detailed review, it remained on the list of documents to be reviewed. The criteria used in Phase II for identification of documents for detailed review are the same as were used in Phase I. They are set out in Attachments 4-B (interrogatories and requests for admissions), 4-C (depositions), and 4-D (affidavits and exhibits).

3. Checking the Results of the Screening Process

An attorney/engineer team other than the team which performed the initial screening was used to check the results of that screening. Using

the same screening criteria, these checking teams reexamined each instance in which a document which was screened had been excluded from detailed review to ensure that no documents had been incorrectly excluded. Previously excluded documents which the checking team determined should be included for detailed review were included with the results of the checking process documented on a new sheet, which replaced the original screening sheet. Checking team members signed all screening process results examined.

Although this checking resulted in minor changes in the list of items included for detailed review, it essentially confirmed the results of the initial screening. The documents recording the results of the initial screening and checking were organized into files and are stored at HL&P's offices in Houston, Texas. The list of documents identified during the screening process for review by SLI is presented in Appendix A.

B. DETAILED REVIEW OF SELECTED LITIGATION DOCUMENTS

1. Introduction

Those parts of the litigation record selected for detailed review by the screening process described above were reviewed in their entirety to determine whether they contain information about any previously unidentified safety-related deficiencies in the design or construction of an STP SSC. A "deficiency" for the purposes of this review is a defect that will or may impair the ability of an SSC to perform its intended function. Deficiencies may exist in the SSC itself or in its associated design documents (e.g., design drawings, calculations, or specifications) or in documents establishing the quality of the SSC (e.g., QA/QC documentation).

Preliminary planning for Phase II of the detailed review began in May 1988 and was updated in November 1988. Estimates were made of the volume and characteristics of the materials to be reviewed. These estimates, in

combination with established schedule requirements, were used to project the manning levels required, as well as the appropriate mix of personnel skills, education, and experience. Mobilization of the required personnel began in late December.

2. The Litigation Review Team

The detailed review of the litigation record was conducted by a team which included a Team Leader, Reviewers, Discipline Specialists, and Overview Specialists. Approximately six engineers participated in the work. SLI also employed a staff of administrative and clerical personnel to provide non-technical support for the technical participants in the review.

a. Technical Participants in the Detailed Review

The Litigation Review Team consisted of employees or subcontractors of S. Levy Incorporated. Individuals who had participated in the preparation of SLI's "Report on Brown & Root Engineering on the South Texas Project" and of technical interrogatory answers during the HL&P v. B&R litigation were utilized to the maximum extent practical, thereby providing a cadre of individuals already familiar with the design and construction of STP and associated technical issues. In addition, most of the Litigation Review Team had participated in the review of the HL&P v. B&R litigation record conducted in late 1985 and early 1986 and Phase I of the COA v. HL&P litigation record conducted in late 1988.

Reviewers reviewed the litigation record documents included for review during the screening process to identify and record any assertions of deficiency appearing in those documents. Reviewers were engineers with at least three years of engineering experience in their respective disciplines.

The Discipline Specialists examined the statements recorded by Reviewers to determine whether these statements failed to meet the criteria for identification of assertions of deficiency, were not safety-related,

had already been identified in Project documentation, or were factually erroneous. Discipline Specialists were engineers with at least seven years of experience working in their respective disciplines on nuclear power plant engineering, design, or construction.

The Overview Specialists examined each instance in which a Discipline Specialist had determined that a statement did not meet the criteria for identification of an assertion. The Overview Specialists also examined each instance in which a Discipline Specialist had determined that an assertion was not safety-related to ensure that this determination was correct in light of any possible systems interaction or interdisciplinary effects. Overview Specialists, along with Discipline Specialists, provided independent verification of the disposition of all assertions. Overview Specialists had at least 10 years of experience doing multi-disciplinary engineering work or overseeing engineering work in different disciplines on nuclear power plants.

The Team Leader was responsible for overall management of the Litigation Record Review Program. The Team Leader (and those he designated to perform tasks assigned to the Team Leader) had a minimum of 10 years of technical management experience related to nuclear plant engineering, design, or construction.

The actual qualifications of the technical participants in the review process considerably exceeded the minimum qualifications stipulated. The names and levels of experience of technical participants in the Litigation Record Review Program are listed in Appendix B. Depending on their qualifications, some individuals performed more than one review function. (For example, some individuals qualified to the level of Overview Specialists acted as Reviewers, Discipline Specialists, and Overview Specialists.)

HL&P engineers in Houston and at STP aided in obtaining necessary information and documents from the Project.

b. Training of Technical Participants for the Review

Before undertaking any detailed review work, each member of the Litigation Review Team attended formal orientation and training sessions. The first formal training session was held on July 27, 1988, in preparation for Phase I, and a second, primarily a "refresher" for Phase II, was held on December 19, 1988. The first session opened with orientation presentations by HL&P's Manager, Engineering & Licensing, Unit 2 and by HL&P's legal counsel. The orientation presentation also included the meaning and intent of 10 CFR 50.55(e) and how it is implemented by HL&P. In all subsequent training sessions for new participants, these presentations were reproduced from video tapes. The bulk of each session was devoted to detailed presentation and discussion of the Project Plan and Procedures, with emphasis on the criteria to be used. These documents and any subsequent revisions were issued to each participant. The Plan contains requirements for administrative action by SLI such as schedule and distribution lists. The Procedures contain the technical requirements of the review. The SLI Corporate Quality Assurance Manager presented SLI's methodology for implementing 10 CFR 50.55(e), 10 CFR 50.72, and 10 CFR Part 21 and the obligations of each participant under these regulations.

In addition to the technical participants, all of the Quality Assurance personnel for SLI and HL&P assigned to the Litigation Record Review Program participated in a training session, and many of the support personnel from the SLI Computations and Records Center participated for the purpose of general orientation.

In addition to the orientation and training session, each technical member of the Litigation Review Team received a training manual containing controlled copies of the Project Plan and Procedures. These were kept up-to-date by inserting current revisions to the Project Plan and Procedures as they were issued. Technical members of the Litigation Review Team referred to their training manuals for guidance during the course of their review work.

c. Computations and Records Centers

To support the technical staff, SLI established a Computations Center and a Records Center. The Computations Center utilized SLI's database system of hardware and software that permitted the information prepared by Litigation Review Team members to be recorded and stored in a controlled, uniform, and accessible fashion. The Records Center is the repository for hard copies of documents used in the review, including copies of litigation record documents reviewed, Project documents used in the review, and the various forms and other documents prepared during the review by the Litigation Review Team.

3. Steps in the Detailed Review Process

The Litigation Review Procedures governing the work of Reviewers, Discipline Specialists, and Overview Specialists are schematically represented in the flowchart appearing in Attachment 4-J.

a. Line-by-Line Review of Record Documents Identified During the Screening Process

A complete list of all documents to be reviewed was prepared based on the results of the screening. (See Appendix A.) The Team Leader assigned specific materials from this list to individual Reviewers who began their review of record documents on December 20, 1988.

If the Reviewer determined that the assigned document or portions of the document had previously been reviewed in the litigation record review of HL&P v. B&R or Phase I of COA v. HL&P, he was instructed to document that fact. In fact, for this Phase II review, no such document or portion of a document was identified.

To help assure a thorough and focused review of every line of every document, each Reviewer made notations in the margin as to the subject matter of the material he was reading and the location of any assertion appearing in it. For each assertion of deficiency in the design or

construction of an STP SSC (or associated design or QA/QC documentation) contained in the review material, the Reviewer completed an Assertion Form, including the exact location of the assertion of deficiency in the reviewed document and a description of the assertion. The Reviewer also assigned the assertion one or more category designators denoting the technical area to which the assertion pertained (e.g., Mechanical, Electrical, Structural). The criteria used by the Reviewers to identify assertions of deficiency are provided in Attachment 4-E. Reviewers were instructed to assume that statements made in litigation record documents were true and accurate, and to record as assertions even those statements which appeared to fall only marginally within the established criteria. All assertions of deficiency were recorded regardless of whether or not they appeared to be safety-related. The Reviewer was also instructed to record the location of every substantive reference to NRC competence or performance on an NRC Citings Form. However, in this Phase II review, no substantive references to the NRC were located.

After completing his review of a particular litigation record document, the Reviewer submitted the handwritten Assertion Forms and NRC Citings Forms for that document to the SLI Computations Center for entry into the computerized database. SLI Computations subsequently supplied the Reviewer with computer printouts of each form. The Reviewer checked these printouts for accuracy and signed them. The signed printouts constitute the official Assertion Forms. These signed Assertion Forms were filed in the Records Center. Any subsequent changes to the Assertion Form were made by formal revision. All versions are retained in the Records Center. Listings of substantive references to the NRC in record documents, if any, would have been provided to HL&P for transmittal to the NRC.

Review of litigation record documents for identification of assertions of deficiency was completed in January 1989.

b. Disposition of Assertions of Deficiency

The completed Assertion Forms prepared by the Reviewers were collected and assigned to Discipline Specialists. Similar assertions recorded from different litigation record documents were grouped so that they could be examined by the same Discipline Specialist.

The Discipline Specialists examined the Assertion Forms assigned to them to determine whether they could be disposed of in the following ways:

- 1) The Discipline Specialists could determine that the assertions had been previously identified in the review of the litigation record of HL&P v. B&R or Phase I of COA v. HL&P. An independent verification of these determinations was performed by an Overview Specialist.
- 2) In cases where it appeared that a statement was recorded that, in fact, failed to meet the criteria defining an assertion of deficiency (see Attachment 4-E), the statement was reexamined along with the text of the litigation record document from which it was taken. Statements found not to meet the criteria were not reviewed further by the Discipline Specialists. However, as a double-check, these statements were further evaluated by Overview Specialists.
- 3) The Discipline Specialist could determine that the substance of the assertion was not safety-related. The specific criteria used by the Discipline Specialists in this determination are listed in Attachment 4-F. Assertions of deficiency determined not to be safety-related were not reviewed further by the Discipline Specialists. However, these assertions were further evaluated by Overview Specialists.
- 4) The Discipline Specialist could determine that the South Texas Project had previously identified the substance of the assertion for resolution. This determination was based on an

examination of STP documentation and was governed by the criteria listed in Attachment 4-G. The types of STP documentation that could be relied upon for this purpose were defined by HL&P (see Appendix C); they are documents maintained as part of the official STP records. Assertions of deficiency resolved or identified for resolution in STP documentation were considered closed for the purposes of the Litigation Record Review Program. An independent verification of these dispositions was performed by an Overview Specialist.

- 5) Finally, the Discipline Specialist reviewed any assertion of deficiency not disposed of as described above to determine whether it was factually erroneous. In making this determination, the Discipline Specialist applied the decision criteria in Attachment 4-H. Assertions determined to be factually erroneous were considered closed. An independent verification of this disposition was performed by an Overview Specialist.

Discipline Specialists were encouraged to communicate with one another as well as with the Overview Specialists and Team Leader (and his designees) to resolve potential interdisciplinary concerns.

The Discipline Specialists recorded the disposition of assertions of deficiency on Disposition Forms. A single Disposition Form could be used to dispose of more than one assertion if the assertions referred to the same deficiency.¹ The handwritten copy of this Form was provided to SLI Computations for entry into SLI's database system. SLI Computations then provided the Discipline Specialist with a computer printout of the form. The Discipline Specialist checked the printed form for accuracy and signed it; this became the official Disposition Form and was filed with the

¹ In some cases a single Disposition Form was used to dispose of assertions describing different deficiencies but subject to the same disposition because they were addressed in the same Project documents or pertained to the same specific SSC.

Records Center. Any subsequent changes to the Disposition Form were made by formal revisions. All versions are retained by the Records Center.

Under the procedures governing the Litigation Record Review Program, any assertions of deficiency that were not determined to be not safety-related, were not shown to have been identified for resolution in Project documentation, and could not be shown to be factually erroneous were to be documented on an HL&P Deficiency Evaluation Form. All Deficiency Evaluation Forms were to be sent to HL&P STP Engineering for evaluation in accordance with existing STP Procedures. In fact, no such assertion was identified in Phase II.

c. Second-Level Reviews by Overview Specialists

Overview Specialists independently verified all Discipline Specialists' determinations that: an assertion had been previously identified in the review of the litigation record of HL&P v. B&R or of Phase I of COA v. HL&P; STP has already resolved the matter covered by the assertion or identified it for resolution; or the assertion is factually erroneous. If the Overview Specialist could not verify the determination, the assertion was reassigned to the Discipline Specialist for alternate disposition.

Those statements determined by the Discipline Specialists not to constitute assertions were reexamined by Overview Specialists, who again applied the "Criteria for Identification of Assertions of Deficiency" (Attachment 4-E) to verify that the Discipline Specialist was correct in his determination that the statement was not an assertion of deficiency. Where the Overview Specialist concluded that a statement had been properly determined not to constitute an assertion, he signified his agreement on the Disposition Form and no further review of that statement was performed. If the Overview Specialist determined that the statement did constitute an assertion of deficiency, the assertion was reassigned to the Discipline Specialist for disposition as an assertion of deficiency.

All assertions of deficiency that were determined by a Discipline Specialist not to be safety-related were also reviewed by Overview Specialists. Using the criteria in Attachment 4-I, the Overview Specialist determined whether the assertion presented concerns arising out of systems interaction considerations or from the possibility that the substance of the assertion crossed discipline lines. If such concerns were determined to be present, the assertion was to be assumed to be safety-related and treated as if it were safety-related. That is, the substance of the assertion would be examined by the Overview Specialists to determine whether the substance of the assertion had already been identified by the South Texas Project or whether it was factually erroneous, using the criteria in Attachments 4-G and 4-H. The individual Overview Specialist's determination that an assertion was not safety-related was reviewed by a panel of Overview Specialists. The panel consisted of Overview Specialists with a broad spectrum of technical expertise. The panel's concurrence that the assertion was not safety-related from a system interaction standpoint was required. Unanimity was reached in all cases.

The Overview Specialists were encouraged to consult with other Overview Specialists, Discipline Specialists, or the Team Leader to maintain awareness of the various types of asserted deficiencies being examined during the review process. Under governing procedures, any assertions that were safety-related but that could not be shown to have been identified in Project documentation and were not shown to be factually erroneous were to be documented on a Deficiency Evaluation Form and sent to HL&P STP Engineering for evaluation in accordance with existing STP Procedures.² In fact, no such assertion was identified.

d. Administrative Control of S. Levy Incorporated Review Process

SLI's detailed review of selected litigation record materials was conducted under formal administrative controls. They provided a means of

² Assertions determined not to be safety-related were nonetheless provided to HL&P's Manager, Engineering and Licensing, Unit 2, for his information.

measuring compliance with review procedures while the review process was under way, thus permitting early identification of the need for any remedial or corrective action. They also provided a means for determining whether the finished product of each phase of work complied with procedures, again facilitating identification of the need for any rework.

The quality of the review process was monitored by a sampling scheme. Approximately 10 percent of each Reviewer's work was required to be evaluated by individuals qualified to the level of a Team Leader (see page B-2). Evaluation of a Reviewer's work consisted of a line-by-line review of the litigation record document reviewed and annotated by the Reviewer and the resulting Assertion and NRC Citings Forms and preparation of checklists showing whether the original work complied with procedures. Departures from procedures were corrected.³

The quality of the assertion dispositioning process was assured by a verification process. All dispositions of assertions were independently verified. In addition, the Team Leader performed sample evaluations of dispositions.

The results of the evaluations of each Reviewer's work were examined to assess the proficiency of the individual Reviewer. If his proficiency was found suspect, additional evaluations of his work were performed until the acceptability of his performance had been established, or all of his work was evaluated and hence corrected.

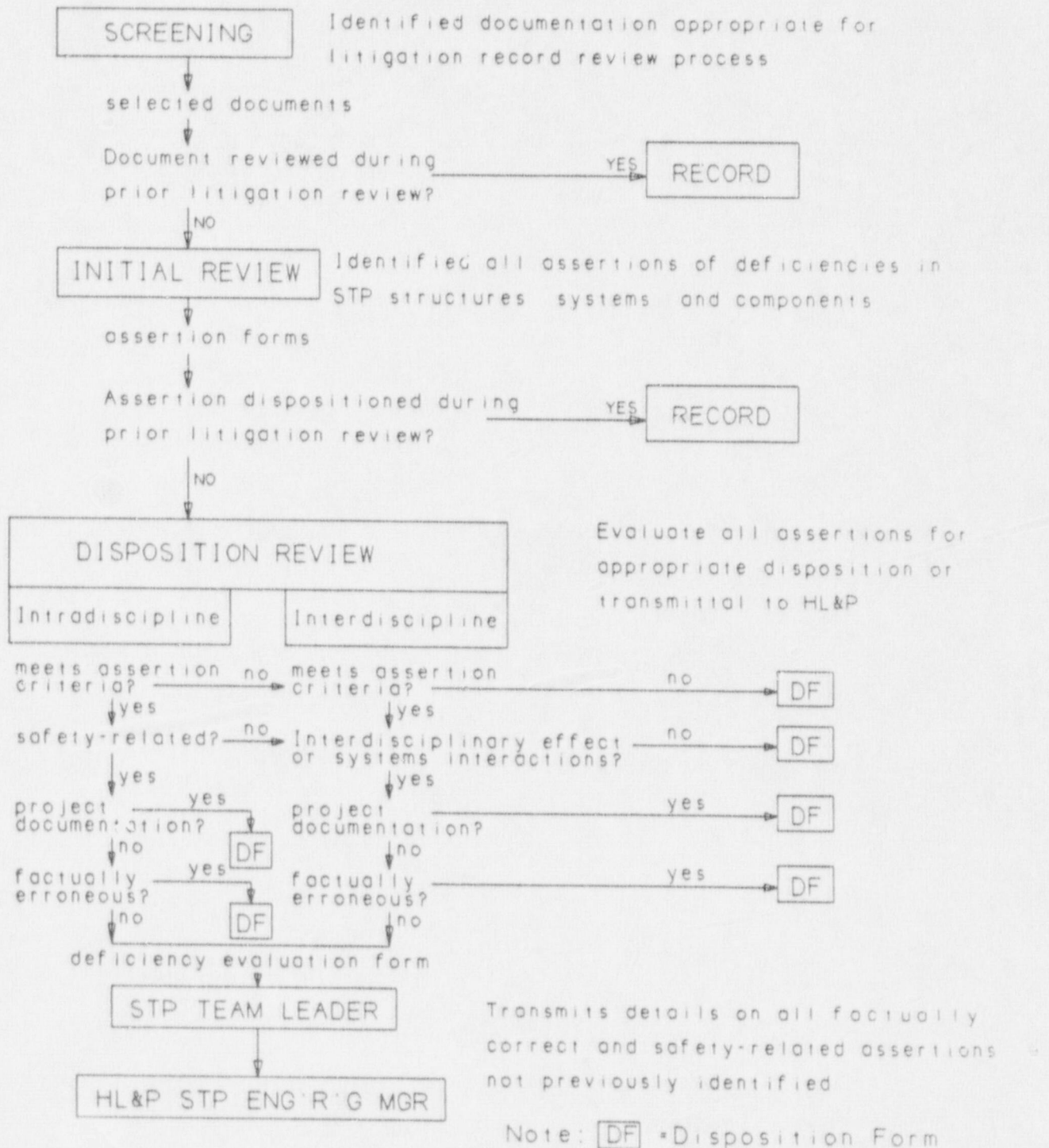
4. Completion of the Work and Issuance of the Report

The work of the Discipline and Overview Specialists was completed on February 15, 1989. Compilation and analysis of review results took place in late January and early February of 1989. All issues raised by SLI and HL&P QA were resolved. This Report was issued on March 1, 1989.

³ Note that the nature of the evaluation process as explained above is equivalent to reperformance of the work.

OUTLINE OF LITIGATION RECORD REVIEW PROCESS

- Interrogatory answers responses to requests for admissions
- Deposition transcripts
- Affidavits
- Exhibits designated for trial or filed with motions for summary judgment



Attachment 4-B

CRITERIA AND METHODOLOGY FOR THE SELECTION OF
INTERROGATORY ANSWERS AND REQUESTS FOR ADMISSIONS FOR REVIEW

This document sets forth the guidelines to be followed to ensure that all interrogatory answers and requests for admissions possibly containing information related to the design or construction of STP systems, structures, or components are reviewed.⁴

A. CRITERIA

1. When there is any reasonable doubt as to whether a set of interrogatories should be included, it must be on the list of documents to be reviewed.
2. If a set of interrogatories requests information on the following subjects, that set of interrogatories must be included for review.
 - Engineering for STP, including engineering analysis and the design of any systems, structures, or components for the project;
 - Construction work at STP;
 - QA or QC activities or programs for STP; and
 - Reviews or reports on engineering or construction for STP.
3. If a set of interrogatories requests information only about the following subjects, the set of interrogatories may be excluded from review unless the reviewers are aware that the answers or

⁴ For convenience, the word "interrogatory" as used in these criteria and methodology applies to both interrogatories and requests for admissions.

set of answers contain information relating to the design or construction of STP systems, structures, or components:⁵

- Accounting, economics, and the financial ability of the owners to complete the project;
- Personnel qualification, turnover, and staffing levels;
- Project schedule and the percentage of engineering or construction work completed;
- Bechtel's, Ebasco's, and B&R's history and experience as architect/engineers outside their performance on STP;
- Owner's selection of B&R as architect/engineer;
- HL&P's or the other Owners' experience in design and construction of facilities other than STP;
- STP Participation Agreement between Owners and associated legal responsibilities;
- Identification or quantification of damages or statements relating to damages (without requesting information concerning the underlying bases for those damages);
- Identification or genuineness of documents;
- The fact that a meeting took place or the number of persons attending the meetings; and
- Project cost estimates.

⁵ If an interrogatory or set of interrogatories requests information on those topics and on any of the topics listed in 2 above, the answers corresponding to those interrogatories must be reviewed.

B. METHODOLOGY

1. Persons conducting the screening.

The initial screening to determine whether interrogatory answers should be reviewed will be performed by a team of one attorney and one engineer/specialist familiar with the design of STP and with issues in the litigation.

2. Steps in screening.

Each set of interrogatories will be examined under the criteria set forth in A. If any interrogatory within a set is determined to be reviewable, that set will be included for review. For each entire set of answers determined not to be reviewable, a short statement will be prepared explaining the reasons why each interrogatory within that set should not be reviewed, and this statement will be signed by the engineer/specialist and the attorney. For questions containing multiple subparts, if any subpart merits review, the entire answer to the question (and therefore the entire set) must be included for review.

The screening team will prepare a list of all sets of interrogatories that will be reviewed. In addition, the screening team will prepare a list of sets of interrogatories that will not be reviewed and attach to that list signed short statements explaining the reason why each interrogatory within those sets will not be reviewed.

ATTACHMENT 4-C

CRITERIA AND METHODOLOGY FOR SELECTION OF
DEPOSITION TRANSCRIPTS FOR REVIEW

This document sets forth the guidelines to be followed to ensure that all deposition transcripts possibly containing information related to the design or construction of STP systems, structures, or components are reviewed.

A. CRITERIA

1. When there is any reasonable doubt as to whether a deposition should be reviewed, it must remain on the list of documents to be reviewed.
2. If the witness held any of the following positions on STP, the deposition must be included for review;
 - Engineer, Designer, Draftsman, or any Engineering Management position;
 - Quality Assurance Inspector, Supervisor, or Manager;
 - Quality Control Inspector, Supervisor, or Manager;
 - Construction Manager, Laborer, or Craft Worker;
 - Licensing Engineer, Supervisor, or Manager; and
 - Purchasing/Procurement Personnel.
3. Depositions of witnesses in the following categories can be excluded from detailed review, unless the screener knows that any of the deposition testimony is related to the technical adequacy of STP design or construction:

- United States Nuclear Regulatory Commission and Department of Justice employees and former employees;
 - Scheduling and project controls witnesses;
 - Accounting, legal (attorney), economics, and financial witnesses;
 - Officials of the State of Texas;
 - Polling, public opinion, psychology, and media communications witnesses;
 - Lobbyists, legislative relations, and government relations witnesses;
 - CP&L Board of Directors and Executive Officers;
 - HL&P Board of Directors and Executive Officers;
 - City of Austin officials;
 - City Public Service Board of San Antonio officials; and
 - Newspaper, magazine, radio, and television station employees.
4. If the deposition is a Rule 201⁶ deposition or a segmented personal deposition, it can be excluded from detailed review if the subject of the deposition is one of the following or if the deponent falls within one of the categories listed in A.3, above. However, if the deponent held one of the positions

⁶ A Rule 201 deposition develops in the following manner. One party serves another party with a notice stating that it desires to take the other party's deposition on a particular subject (e.g., impact of regulatory change on STP). The other party then provides a witness knowledgeable about that subject to testify. In Rule 201 depositions, the questions and testimony related only to the particular subject described in the notice of deposition.

listed in A.2, above, or if the screener knows that any of the deposition testimony is related to the technical adequacy of STP design or construction, the deposition shall be included for review.

- Financial constraints on completion of the Project;
- Personnel qualifications, turnover, and staffing levels;
- Project Control (tracking progress of work on STP against published schedule);
- Negotiations and Terms for the contract between the STP Owners and B&R;
- Administrative matters concerning document collection and production in the litigation;
- Project Cost Estimates;
- Public Relations and Marketing;
- Site Access for Construction;
- Damage Theories and Quantification;
- STP Participation Agreement between the Owners; and
- Nature and Effect of any tolling agreements between the STP Owners or between the STP Owners and B&R.

5. Rule 201 or personal segmented depositions may not be excluded from detailed review if the subject of the deposition concerns any of the following:

- Any STP system, structure, or component;
- QA/QC activities or documentation which relate to any STP system, structure, or component; and

- Reports or reviews concerning the quality of STP engineering, construction or QA/QC of any STP system, structure, or component.

B. METHODOLOGY

1. Persons conducting the screening.

The screening to identify the depositions to be reviewed will be performed by a team of one attorney and one engineer/specialist familiar with the design of STP and with issues in the litigation.

2. Steps in screening.

Each deposition will be examined under the criteria set forth in A, above. For each deposition determined not to require review, a short statement will be prepared explaining the reasons why that deposition should not be reviewed, signed by the engineer/specialist and the attorney.

The screening team will prepare a list of all depositions that will be reviewed. In addition, the screening team will prepare a list of all depositions that will not be reviewed and attach to that list the signed short statements explaining the reasons why each listed deposition will not be reviewed.

ATTACHMENT 4-D

CRITERIA AND METHODOLOGY FOR SELECTION OF AFFIDAVITS AND EXHIBITS FOR REVIEW

This document sets forth the guidelines to be followed to ensure that all affidavits and exhibits filed with motions for summary judgment and exhibits designated for trial (collectively referred to as "exhibits") possibly containing information related to the design or construction of STP systems, structures, or components are reviewed.

A. CRITERIA

1. When there is any reasonable doubt as to whether an exhibit should be included for review, it must remain on the list of documents to be reviewed. Exhibits that are very large and consist of multiple documents or sections may be split into individual documents for screening and review purposes.
2. Exhibits that are depositions, interrogatories, or requests for admission that are part of the COA v. HL&P record are being reviewed under the screening criteria for those documents and will not be separately reviewed under this set of criteria. In addition, the following categories of exhibits will be excluded from review:
 - Project documents already maintained in the STP Records Management System, annual public financial reports of the STP Owners, or documents provided to all of the STP Owners during the regular course of business, or documents recording meetings between joint committees of the STP Owners;
 - Documents already screened in the HL&P v. B&R Litigation Record Review Program;

- Documents prepared by, transmitted to, or maintained in the files of the NRC or other U.S. Government agencies, and minutes or reports of meetings at which the NRC was in attendance;
 - PUC case materials, including prefiled and oral testimony except for the prefiled testimony of expert witnesses in Docket 6668 where those witnesses have also been designated as witnesses in the COA v. HL&P litigation; and
 - Newspaper or magazine articles, press releases, or radio or television broadcasts.
3. If the document addresses one of the following topics, and is not one of the class of documents described in A.2, above, the document must be included for review:
- The quality of engineering for STP, including engineering analysis and the design of any systems, structures, or components for STP;
 - The quality of construction work at STP;
 - The quality of QA or QC activities or programs for STP;
 - Reviews or reports on engineering or construction for STP.
4. If an exhibit contains information only about the following subjects or is of the type as listed below, it may be excluded from review unless the reviewers are aware that it contains technical information relating to the quality or design or construction of STP systems, structures, or components.⁷

⁷ If an exhibit contains information on these topics and on any of the topics listed in A.3, above, the exhibit must be reviewed, unless it is among the categories of documents listed in A.2, above.

- Accounting, economics, cost estimates, project controls, scheduling, and damages quantification;
- Lobbying, government relations, or legislative relations;
- Personnel qualifications, turnover, organization, and staffing;
- Public opinion, polling, or media communications;
- Negotiations and representations between the STP Owners or between the STP Owners and B&R;
- General nuclear industry information not specifically related to STP;
- Newspaper articles, periodicals, and advertisements;
- Documents prepared by or submitted to the Securities and Exchange Commission;
- Radio/television presentations;
- Commercial documents such as contracts, proposals, purchase orders, receipts, or other business agreements;
- Documents prepared by or submitted to the U.S. Department of Justice;
- Court hearing transcripts, court orders, legal pleadings, and other documents presenting legal arguments or affidavits of lawyers, paralegals, or legal secretaries;
- Documents prepared prior to January 1, 1973;
- Published decisions of courts or administrative tribunals;

- Documents prepared for purposes of the Texas Public Utility Commission proceedings relating to STP which have been made publicly available through filing in those proceedings (except for documents prepared by persons designated as witnesses in the COA v. HL&P litigation); and
- Ordinances, public reports, or official notices or statements issued by the City of Austin, Texas.

B. METHODOLOGY

1. Persons conducting the screening.

The screening to determine whether the exhibit should be reviewed will be performed by a team of one lawyer and one engineer/specialist familiar with the design of STP and with issues in the litigation.

2. Steps in screening.

Each exhibit will be examined under the criteria set forth in A. All exhibits that require review will be marked as such and recorded. For each exhibit determined not to require review, a short statement explaining why no review is required will be prepared and signed by the engineer/specialist and the attorney.

The screening team will prepare a list of all exhibits that will be reviewed. In addition, the screening team will prepare a list of all exhibits that will not be reviewed and attach to that list the signed short statements explaining the reasons why each listed exhibit will not be reviewed.

ATTACHMENT 4-E

CRITERIA FOR IDENTIFICATION OF ASSERTIONS OF DEFICIENCY

In order to be recorded, an assertion must satisfy each of the following criteria:

1. The assertion must pertain to at least one of the following or to their associated design or quality control documents:
 - 1.1 STP systems, structures, or components (SSC).
 - 1.2 Classes of STP SSC (such as valves, reinforced concrete walls, electric systems).
 - 1.3 Processes relating to specific STP SSCs (such as welding, coatings).
 - 1.4 The overall STP site (data or studies on meteorology, seismology, demographics, etc.).
2. The assertion must either:
 - (a) Describe a deficiency. A deficiency is a defect which will or may impair the ability of an SSC to perform its intended function; or
 - (b) If the assertion does not include any specific deficiency, as defined under (a), it must pertain to documents providing objective evidence of the quality of design or construction for specific SSCs at STP. (Absence of calculations for system X, lack of verification documents for component Y, incomplete QC records for weld N, etc.)

3. The assertion must satisfy one of the following criteria:
 - 3.1 It was made by a witness in a deposition.
 - 3.2 It was confirmed by a witness accepting a statement by a lawyer.
 - 3.3 It was made by a party in an interrogatory answer, request for admissions, or exhibit.

ATTACHMENT 4-F

CRITERIA FOR SAFETY DETERMINATION

1. An assertion of deficiency that involves system(s), structure(s) or component(s) which have been classified by the South Texas Project as one of the following is a safety-related assertion:

- Safety Class 1
- Safety Class 2
- Safety Class 3
- Class 1E
- Seismic Category 1

2. An assertion of deficiency that involves system(s), structure(s), or component(s) that are listed in the STP FSAR Section 3.2 or in the Bechtel Energy Corporation Design Criteria for the South Texas Project as safety-related items is a safety-related assertion.
3. An assertion of deficiency that involves system(s), structure(s), or component(s) with a Total Plant Numbering System (TPNS) number that designates a safety-related item (1, 2, 3, 4 or 5) is a safety-related assertion.

ATTACHMENT 4-G

CRITERIA FOR DEMONSTRATING STP IDENTIFICATION

1. The STP documents cited by the Specialist as evidence of prior identification of the substance of an assertion by the STP must completely cover the specific assertion of deficiency.
2. The STP documents by the Specialist must show:
 - a. that the deficiency asserted has been corrected;
 - b. that the deficiency asserted is in the process of being corrected; or
 - c. that the deficiency asserted has been identified for resolution.
3. Documents cited as reflecting corrective action or identification for resolution of the asserted deficiency must appear on the list of documents approved for reference on Disposition Forms.
4. The reasons why STP documentation shows adequate identification or corrective action must be clearly stated by the Specialist.

ATTACHMENT 4-H

CRITERIA FOR DETERMINATION ON FACTUAL BASIS

1. STP documentation must provide positive evidence showing the assertion to be factually erroneous. Unless STP documentation provides such positive evidence, the Specialist may not classify the assertion as factually erroneous.
2. The referenced STP documentation must describe the system, structure, or component as designed or constructed at or after the time the deficiency is asserted to have existed.
3. The reasons why the documentation shows the assertion to be factually erroneous must be clearly articulated by the Specialist.

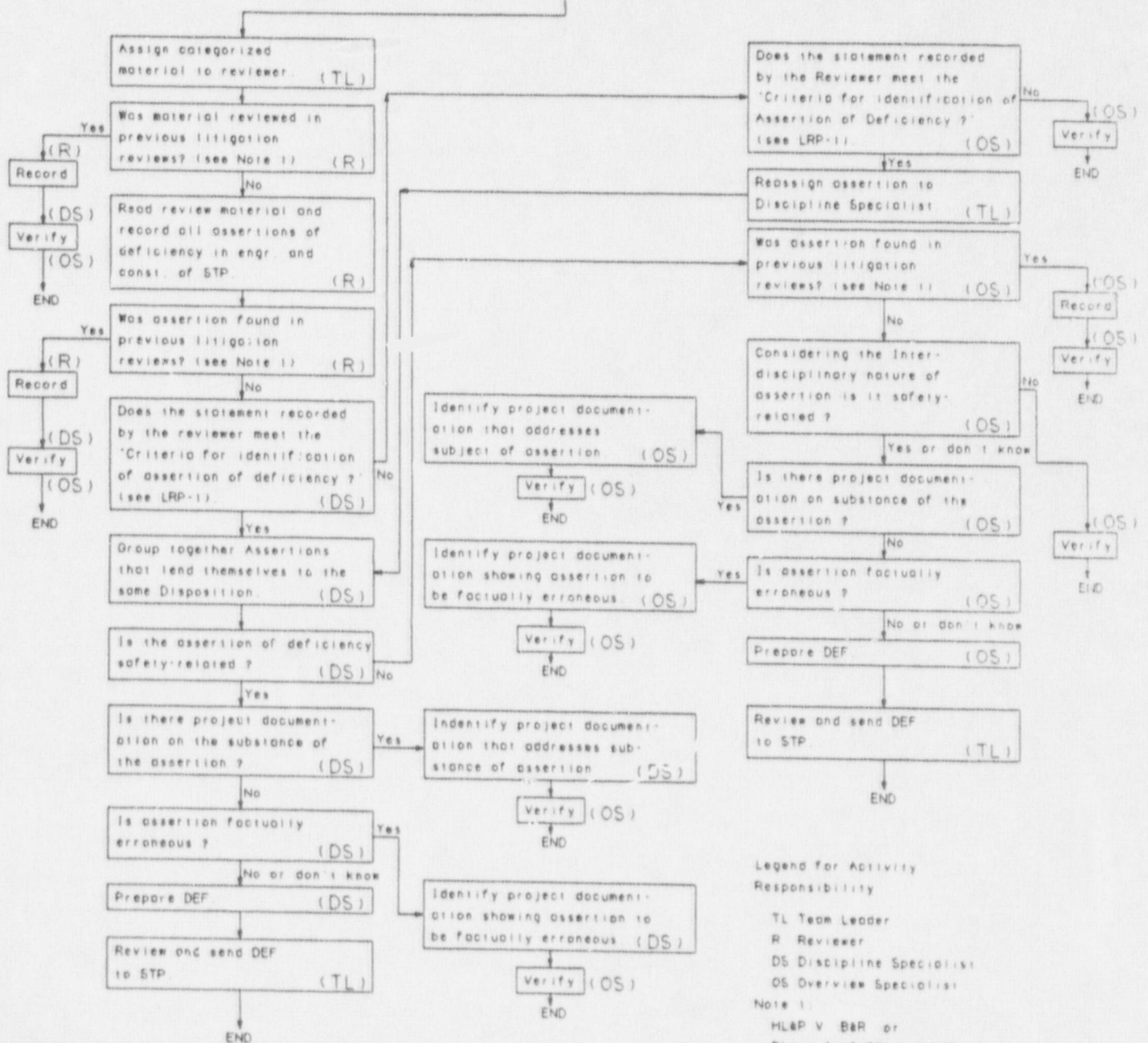
ATTACHMENT 4-I

CRITERIA FOR INTERDISCIPLINARY AND
SYSTEMS INTERACTION DETERMINATION

1. An assertion of deficiency that involves disciplines other than that of the Discipline Specialist who initially determined that the substance of the assertion is not safety-related must be reviewed by the Overview Specialist to determine whether it is safety-related.
2. An assertion of deficiency that involves system(s), structure(s), or component(s) (SSC) other than those considered by the Discipline Specialist in his initial disposition of the assertion as not safety-related must be reviewed by the Overview Specialist to determine whether it is safety-related.
3. If the SSC considered by the Discipline Specialist shares a component or a process or has physical supporting connections to another SSC, the assertion must be reviewed by the Overview Specialist to determine whether it is safety-related.
4. If the functional or physical failure of the SSC considered by the Discipline Specialist in dispositioning an assertion could propagate to other SSCs, the assertion must be reviewed by the Overview Specialist to determine whether it is safety-related.

LITIGATION RECORD REVIEW FLOWCHART

Categorize: interrogatory answers; responses to requests for admissions; depositions transcripts; affidavits; exhibits designated for trial or filed with motions for summary judgment.



Legend for Activity Responsibility
 TL Team Leader
 R Reviewer
 DS Discipline Specialist
 OS Overview Specialist
 Note 1:
 HL&P V. B&R or
 Phase I of COA V. HL&P

SECTION 5
QUALITY ASSURANCE

A. INTRODUCTION

The detailed review of selected litigation record documents performed by SLI was closely monitored under a Quality Assurance program conducted by SLI's Corporate Quality Assurance Manager. An audit by HL&P's QA department was also performed.

B. S. LEVY INCORPORATED QUALITY ASSURANCE

The SLI Quality Assurance Program was conducted in conformance with SLI's standard Quality Assurance Program Manual, Rev. 1, and procedures issued pursuant thereto. SLI's Corporate Quality Assurance Manager, who reports directly to SLI's President, directed all aspects of the SLI QA Program for the review independent of SLI's personnel assigned to perform the review.

The functions of SLI's QA Program were to monitor compliance with the contract, SLI's QA Manual, and the Plan and Procedures during and at the conclusion of the review. In addition, SLI QA performed substantive surveillance of the Litigation Record Review Program on a sample basis.

SLI's QA Program for the review was implemented by SLI's Corporate QA Manager and a qualified and experienced QA specialist. These QA personnel were experienced in the QA/QC technical specialties and also had considerable experience in nuclear plant design, construction, and operations. Each participated in formal training sessions for the Litigation Record Review Program.

Two distinct types of QA surveillance of the review work were conducted in Phase II. First, 133 individual reviews were performed throughout Phase II of the review process. These were consolidated into 13

QA review reports. These QA reviews consisted of the conventional QA/QC checks on the qualifications of personnel, the processing and control of documents, records collection and storage, and compliance with applicable SLI litigation review procedures.

Secondly, substantive surveillances of the review work were performed during Phase II. These substantive surveillances went beyond the normal application of conventional QA/QC principles in that the technical bases and the logic process leading to the engineering decisions were checked for compliance, completeness, and consistency. Eighty-one of the 132 assertion forms generated were examined in this manner. This included examination of samples of litigation record documents reviewed by each Reviewer, along with the completed Assertion Forms and NRC Citings Forms, if any, for those documents, to assure that all assertions and substantive references to the NRC appearing in the litigation record documents were properly recorded. In addition, eight dispositions (two for each of the four Discipline Specialists) of the 102 dispositions processed were evaluated and all eight of the overview dispositions were similarly examined along with the Project documents referenced on these forms to assure that the documentation adequately supported the dispositions.

No issues or problems were discovered by SLI QA during these QA reviews and substantive surveillances. As a result, no Action Item Requests (AIRs) or Deviation Reports (DRs) were issued. An AIR is used to document an apparent deviation from specific requirements or to request clarification of a specific issue. A DR is used to document a clear deviation from specific requirements and the evaluation and resolution of that deviation. This problem definition and resolution system was available to SLI's QA specialists, HL&P Project QA, and other participants in the review. SLI QA Specialists are responsible for participating in and monitoring the evaluation, resolution, and closeout of all corrective action associated with the AIRs and DRs.

At the conclusion of the review effort, SLI's QA Manager prepared a report summarizing his findings for the entire surveillance effort. In

general, it was concluded that there were no outstanding issues, the review had been conducted in a technically competent and controlled fashion, and that the program objectives had been met.

C. HOUSTON LIGHTING & POWER COMPANY QUALITY ASSURANCE

HL&P's Nuclear Assurance (NA) Department performed one audit of Phase II of the litigation review effort. This audit was performed at the end of the program. The audit was structured to cover every type of litigation document sent to SLI for review and was conducted using HL&P NA procedures. The resulting audit report, to be issued in accordance with these procedures, will be available for review. The exit interview indicated that this report will conclude there were no outstanding issues and that the SLI Litigation Record Review Program adequately met HL&P's Quality Assurance and technical requirements.

SECTION 6

OVERSIGHT BY THE SENIOR ADVISORY PANEL

HL&P selected a Senior Advisory Panel (the Panel) to monitor the Litigation Record Review Program in order to assure that the objectives of the review are achieved. The Panel, the same as the one that monitored the Phase I program, is described in the Phase I report dated November 1988. For Phase II, the Panel reviewed the litigation review program and the preliminary draft of this report with the Team Leader and representatives of the SLI and HL&P QA organizations. The Panel is expected to issue a statement shortly after issuance of this report.

SECTION 7

RESULTS OF THE LITIGATION RECORD REVIEW

A. RESULTS OF THE SCREENING PROCESS

The screening process resulted in the inclusion of a substantial portion of the litigation record for detailed review by SLI. Listed below are the results of the screening process for each category (depositions and exhibits) of documents screened.

1. Depositions

a.	Total number of deponents screened	7
b.	Deponents whose depositions were included for detailed review	2
c.	Deponents whose depositions were excluded from detailed review	5
d.	Total number of deposition volumes included for detailed review ⁸	7

2. Exhibits Designated for Trial

a.	Total number of exhibits designated for trial	1116
b.	Number of individual exhibits designated for trial included for detailed review as a result of screening	75

⁸ Deposition transcript volumes included an average of 238 pages.

Table 7-1 identifies the originators of the litigation record documents transmitted to SLI for review.

TABLE 7-1

Litigation Documents Transmitted to SLI for Review

Depositions

<u>Source</u>	<u>No. of Volumes</u>
1. City of San Antonio employee or former employee	5
2. City of Austin employee or former employee	2
3. Others	0
Total	7

Exhibits

<u>Source</u>	<u>No. of Exhibits</u>
1. HL&P letterhead	12
2. Bechtel letterhead	0
3. Brown & Root letterhead	12
4. Others	51
Total	75

Total items to be reviewed by SLI 82

Thus, of the items reviewed by SLI, 31 (or 38 percent) were generated by the Cities of San Antonio and Austin, HL&P, or Brown & Root, and 62 percent came from other sources.

B. RESULTS OF S. LEVY INCORPORATED DETAILED REVIEW

1. Identification of Assertions of Deficiency

SLI Reviewers recorded a total of 127 assertions of deficiency in the litigation record documents reviewed. A total of 132 statements were originally recorded on Assertion Forms, but, after a two-tiered review of these statements by the Discipline Specialists and Overview Specialists, 5 were determined not to meet the criteria for identification of assertions of deficiency. This left a total of 127 actual assertions of deficiency to be disposed of. Of these 127 assertions, 74 were contained in just one exhibit (a draft of a 1986 report on the basis for the settlement of HL&P v. B&R) and the other 53 assertions were scattered over 23 of the documents reviewed. No assertions were identified in 58 of the items reviewed. The distribution of assertions by source is set out in Table 7-2.

TABLE 7-2

Distribution of Assertions by Source

<u>Source</u>	<u>No. of Assertions</u>	<u>% of Total</u>
<u>Depositions</u>		
1. City of San Antonio employee or former employee	4	3
2. City of Austin employee or former employee	4	3
3. Others	0	0
<u>Exhibits</u>		
1. HL&P letterhead	1	1
2. Bechtel letterhead	0	0
3. Brown & Root letterhead	10	8
4. Others	108	85
Total	<u>127</u>	<u>100</u>

The assertions identified fell within three technical areas. Table 7-3 shows the distribution of assertions by technical area.

TABLE 7-3

Distribution of Assertions by Technical Area

<u>Technical Area</u>	<u>No. of Assertions</u>	<u>% of Total</u>
1. Mechanical		
a. Piping, including hangers, supports, restraints, etc.	11	9
b. Balance of plant steam, condensate, and feedwater components	3	2
c. Nuclear steam supply system and components	5	4
d. Pumps, tanks, valves, and other specific mechanical components	6	5
e. Materials handling and storage	6	5
f. Heating, ventilating, and air conditioning	2	1.5
g. Radwaste, water, and services	2	1.5
h. Welding	15	12
i. Paint and coatings	9	7
2. Civil/Structural		
a. Concrete and concrete reinforcement	22	17
b. Structural and miscellaneous steel	13	10
c. Anchor bolts and embeds	8	6
d. Building layout and fenestrations	9	7
e. Site/soil	9	7
3. Electrical		
a. Instrumentation and controls	0	0
b. Cables, ducts, trays, and penetrations	6	5
c. AC power distribution system	0	0
d. DC power distribution system	1	1
e. Radiation detection, industrial protection, and ancillary systems	0	0
Total	<u>127</u>	<u>100</u>

Over 40 percent of the assertions pertained to areas which had been extensively reviewed during the period of the NRC IR79-19 investigation and the Order to Show Cause. Concrete and concrete reinforcement, soils, paint and coatings, and welding were all thoroughly examined during and following the 79-19 investigation.

Heating, ventilating, and air conditioning systems in most STP buildings were completely redesigned by Bechtel after 1981. Bechtel also substantially redesigned B&R's layout of cables, trays and ducts, and redesigned or completed substantial portions of B&R's piping design, along with associated pumps, tanks and valves. Anchor bolts and embed problems had been subject to repeated examination both before and after Brown & Root was replaced. Together, these areas accounted for approximately 25 percent of all assertions.

2. Disposition of Assertions

Assertions identified were dispositioned as follows:

- a. The substance of 91 assertions was determined to have been previously identified in the HL&P v. B&R or Phase I of the COA v. HL&P Litigation Record Review Programs.
- b. The substance of 7 assertions was determined not to be safety-related and not to present interaction or inter-disciplinary concerns.
- c. The substance of 28 assertions was determined to have already been identified in Project documentation.
- d. One (1) assertion was determined to be factually erroneous.

Table 7-4 shows the disposition of assertions from the various litigation record sources.

TABLE 7-4

Disposition of Assertions by Source

<u>Source</u>	<u>Previously Identified</u>	<u>Not Safety-Related⁹</u>	<u>Project Cognizant</u>	<u>Factually Erroneous</u>
<u>Depositions</u>				
1. City of San Antonio employee or former employee	1	0	2	1
2. City of Austin employee or former employee	1	0	3	0
<u>Exhibits</u>				
1. HL&P letterhead	1	0	1	0
2. Bechtel letterhead	0	0	0	0
3. Brown & Root letterhead	7	0	0	0
4. Others	81	7	22	0
TOTALS	<u>91</u>	<u>7</u>	<u>28</u>	<u>1</u>

Assertions disposed of on the same Disposition Form either described the exact same deficiency or, in a few cases, were discussed in the same Project documents or pertained to the same specific SSC as the other assertions on the form. Thus, the 127 assertions required only 102 separate dispositions.

Table 7-5 illustrates the disposition of assertions by technical area.

⁹ This column includes assertions found not to be safety-related and not to present systems interaction or interdisciplinary concerns that could affect the operation of a safety-related system.

TABLE 7-5

Disposition of Assertions by Technical Area

<u>Technical Area</u>	<u>Disposition of Assertions</u>			
	<u>Percent Previously Identified</u>	<u>Percent Not Safety-Related</u>	<u>Percent Project Cognizant</u>	<u>Percent Factually Erroneous</u>
1. Mechanical	72.88	5.08	20.34	1.70
2. Civil/ Structural	70.49	6.56	22.95	0
3. Electrical	71.43	0	28.57	0
Average for all assertions	<u>71.65</u>	<u>5.51</u>	<u>22.05</u>	<u>0.79</u>

In sum, all of the assertions were determined either to have been previously identified and dispositioned in the HL&P v. B&R or Phase I of the COA v. HL&P Litigation Record Review Programs, not to be safety-related, to have been previously identified or resolved in STP documentation, or to be factually erroneous. Over 70 percent of the assertions were dispositioned as having been identified and dispositioned in the HL&P v. B&R or Phase I of the COA v. HL&P Litigation Record Review Programs. Of the new assertions in Phase II of the COA v. HL&P litigation record, more than 90 percent were shown to have been previously identified in STP documentation. The remainder were shown to be factually erroneous or not safety-related. This result is reasonable in view of the unusual level of scrutiny to which the STP design and construction have been subjected.

The process by which these results were developed was subject to a number of independent checks, including QA programs conducted by SLI and HL&P (see Section 5), and oversight of the Senior Advisory Panel (see

Section 6). In addition, SLI management evaluated the performance of each stage of SLI's review (see Section 4). Each of these checks provided assurance that the review process functioned properly and produced accurate results.

Finally, a detailed record of the review has been retained as a permanent record of the work.

An overall review of the entire set of assertions was conducted by the Team Leader to see if the assertions might suggest deficiencies not otherwise disclosed or recognized. The review was performed by first sorting the assertions in groups by technical area (see Table 7-3). Then within each technical area, the assertions with the same disposition were grouped. Examination of this listing did not suggest undisclosed or unrecognized deficiencies in STP SSC. The number of assertions was fairly small (127). Further, over half came from one document which presented a compilation of previously known complaints with Brown & Root. The remaining half appeared to have no correlation and did not suggest a pattern.

SECTION 8

CONCLUSION

This litigation record review was a detailed, comprehensive and systematic examination of those portions of Phase II of the COA v. HL&P litigation record which were likely to contain assertions of deficiencies in STP systems, structures, or components and their associated design and quality documents. The review did not disclose any previously unrecognized safety-related deficiencies in STP systems, structures, or components. The results of the review demonstrate that safety-related deficiencies asserted in the litigation have already been identified. This fact underscores the thoroughness and success of the earlier intensive reviews performed on the STP. Because this review was subject to extensive QA and management review, there is a high level of assurance that it functioned properly and produced accurate results.

APPENDIX A

This Appendix lists litigation record documents reviewed by S. Levy Incorporated.

The documents are grouped into either oral depositions or exhibits designated for trial beginning on page A-1.

Oral Depositions

The oral depositions are listed alphabetically by deponent. If the deponent participated in a deposition resulting in a transcript of more than one volume or participated in more than one deposition, these are listed consecutively by date within the deponent's alphabetical listing.

Exhibits Designated for Trial

The Exhibits designated for trial have been listed in numerical order according to the identification number assigned by HL&P.

Appendix A

<u>Document Number</u>	<u>Document Title</u>
C0001	Oral Deposition of HANCOCK, R. L.; Vol. 2; Dated 10/19/88
C0002	Oral Deposition of HANCOCK, R. L.; Vol. 3; Dated 10/24/88
C0003	Oral Deposition of POSTON, JESSE; Vol. 1; Dated 11/07/88
C0004	Oral Deposition of POSTON, JESSE; Vol. 2; Dated 11/08/88
C0005	Oral Deposition of POSTON, JESSE; Vol. 3; Dated 11/09/88
C0006	Oral Deposition of POSTON, JESSE; Vol. 4; Dated 11/10/88
C0007	Oral Deposition of POSTON, JESSE; Vol. 5; Dated 11/11/88
C0008	Exhibit 708: HL&P Exhibit Designated for Trial
C0009	Exhibit 712: HL&P Exhibit Designated for Trial
C0010	Exhibit 795: COA Exhibit Designated for Trial
C0011	Exhibit 880: COA Exhibit Designated for Trial
C0012	Exhibit 1029: COA Exhibit Designated for Trial
C0013	Exhibit 1228: COA Exhibit Designated for Trial
C0014	Exhibit 1229: COA Exhibit Designated for Trial
C0015	Exhibit 1246: HL&P Exhibit Designated for Trial
C0016	Exhibit 1322: COA Exhibit Designated for Trial
C0017	Exhibit 1346: COA Exhibit Designated for Trial
C0018	Exhibit 1353: COA Exhibit Designated for Trial
C0019	Exhibit 1477: HL&P Exhibit Designated for Trial
C0020	Exhibit 1478: COA Exhibit Designated for Trial

Appendix A

Document Number	Document Title
C0021	Exhibit 1608: HL&P Exhibit Designated for Trial
C0022	Exhibit 1644: COA Exhibit Designated for Trial
C0023	Exhibit 1679: HL&P Exhibit Designated for Trial
C0024	Exhibit 1689: COA Exhibit Designated for Trial
C0025	Exhibit 2054: HL&P Exhibit Designated for Trial
C0026	Exhibit 2061: HL&P Exhibit Designated for Trial
C0027	Exhibit 2103: HL&P Exhibit Designated for Trial
C0028	Exhibit 2139: HL&P Exhibit Designated for Trial
C0029	Exhibit 2167: HL&P Exhibit Designated for Trial
C0030	Exhibit 2172: HL&P Exhibit Designated for Trial
C0031	Exhibit 2173: HL&P Exhibit Designated for Trial
C0032	Exhibit 2190: HL&P Exhibit Designated for Trial
C0033	Exhibit 2195: HL&P Exhibit Designated for Trial
C0034	Exhibit 2204: HL&P Exhibit Designated for Trial
C0035	Exhibit 2212: HL&P Exhibit Designated for Trial
C0036	Exhibit 2221: HL&P Exhibit Designated for Trial
C0037	Exhibit 2230: HL&P Exhibit Designated for Trial
C0038	Exhibit 2233: HL&P Exhibit Designated for Trial
C0039	Exhibit 2238: HL&P Exhibit Designated for Trial
C0040	Exhibit 2260: HL&P Exhibit Designated for Trial
C0041	Exhibit 2276: HL&P Exhibit Designated for Trial
C0042	Exhibit 2278: HL&P Exhibit Designated for Trial
C0043	Exhibit 2279: HL&P Exhibit Designated for Trial
C0044	Exhibit 2280: HL&P Exhibit Designated for Trial

Appendix A

<u>Document Number</u>	<u>Document Title</u>
C0045	Exhibit 2281: HL&P Exhibit Designated for Trial
C0046	Exhibit 2282: HL&P Exhibit Designated for Trial
C0047	Exhibit 2289: HL&P Exhibit Designated for Trial
C0048	Exhibit 2294: HL&P Exhibit Designated for Trial
C0049	Exhibit 2299: HL&P Exhibit Designated for Trial
C0050	Exhibit 2302: HL&P Exhibit Designated for Trial
C0051	Exhibit 2307: HL&P Exhibit Designated for Trial
C0052	Exhibit 2308: HL&P Exhibit Designated for Trial
C0053	Exhibit 2318: HL&P Exhibit Designated for Trial
C0054	Exhibit 2332: HL&P Exhibit Designated for Trial
C0055	Exhibit 2333: HL&P Exhibit Designated for Trial
C0056	Exhibit 2344: HL&P Exhibit Designated for Trial
C0057	Exhibit 2352: HL&P Exhibit Designated for Trial
C0058	Exhibit 2355: HL&P Exhibit Designated for Trial
C0059	Exhibit 2361: HL&P Exhibit Designated for Trial
C0060	Exhibit 2365: HL&P Exhibit Designated for Trial
C0061	Exhibit 2367: HL&P Exhibit Designated for Trial
C0062	Exhibit 2370: HL&P Exhibit Designated for Trial
C0063	Exhibit 2378: HL&P Exhibit Designated for Trial
C0064	Exhibit 2379: HL&P Exhibit Designated for Trial
C0065	Exhibit 2380: HL&P Exhibit Designated for Trial
C0066	Exhibit 2381: HL&P Exhibit Designated for Trial
C0067	Exhibit 2415: HL&P Exhibit Designated for Trial
C0068	Exhibit 2417: HL&P Exhibit Designated for Trial

Appendix A

<u>Document Number</u>	<u>Document Title</u>
C0069	Exhibit 2431: HL&P Exhibit Designated for Trial
C0070	Exhibit 2433: HL&P Exhibit Designated for Trial
C0071	Exhibit 2446: HL&P Exhibit Designated for Trial
C0072	Exhibit 2451: HL&P Exhibit Designated for Trial
C0073	Exhibit 2452: HL&P Exhibit Designated for Trial
C0074	Exhibit 2462: HL&P Exhibit Designated for Trial
C0075	Exhibit 2474: HL&P Exhibit Designated for Trial
C0076	Exhibit 2481: HL&P Exhibit Designated for Trial
C0077	Exhibit 2483: HL&P Exhibit Designated for Trial
C0078	Exhibit 2489: HL&P Exhibit Designated for Trial
C0079	Exhibit 2513: HL&P Exhibit Designated for Trial
C0080	Exhibit 2558: HL&P Exhibit Designated for Trial
C0081	Exhibit 2572: HL&P Exhibit Designated for Trial
C0082	Exhibit 2713: HL&P Exhibit Designated for Trial

APPENDIX B

Appendix B lists the persons who participated in SLI's review of the documents listed in Appendix A.

These individuals are divided into four groups: Team Leaders, Overview Specialists, Discipline Specialists, and Reviewers. Each person is listed in the highest category for which he or she is qualified by education and experience. Team Leader is the designation for an individual whose education and experience qualify him to perform all or any portion of the review. A Team Leader may perform as an Overview Specialist, a Discipline Specialist or a Reviewer, but none of the latter three may perform as a Team Leader. An Overview Specialist may also perform as a Discipline Specialist or as a Reviewer, but neither of the latter two may perform as an Overview Specialist. A Discipline Specialist may also perform as a Reviewer, but a Reviewer may not perform as a Discipline Specialist.

The professional degree or degrees held by each individual and the primary areas of expertise of the individual are listed immediately after the individual's name. The number of years of experience in the nuclear industry of each individual and his other years of professional level practice are listed in the columns titled "Professional Practice Years" and "Nuclear Experience Years." The number of years of professional practice is the total number of years the individual has practiced his engineering disciplines. The number of years of nuclear experience is that portion of the professional practice during which the individual has practiced his engineering disciplines in the nuclear industry.

LITIGATION RECORD REVIEW

TEAM QUALIFICATIONS

<u>Name</u>	<u>Professional Practice Years</u>	<u>Nuclear Experience Years</u>
<u>TEAM LEADER</u>		
C. B. Johnson, BS, Mechanical Engineering; Safety Analysis, Mechanical Systems, Instrumentation and Control, Equipment Design	27	24
L. E. Minnick, BS, Mechanical Engineering; Mechanical Systems, Reactor Design, Safety Analysis, Instrumentation and Control, Plant Operation, Management (Utility)	40	33
R. F. Petrokas, MS, Engineering Mechanics; Mechanical Systems, Piping, Safety Analysis, Stress Analysis	23	17
R. Srinivasan, PhD, Civil Engineering; Piping, Stress Analysis, Civil Engineering, Seismology, Management	16	16
G. Walke, MS, Public Health; Safety Analysis, Health Physics, Meteorology, Quality Assurance, Management (Utility)	31	31
<u>OVERVIEW SPECIALIST</u>		
S. W. Kaut, BS, Electrical Engineering; Electrical Systems, Instrumentation and Control, Safety Analysis	25	21
G. S. Lellouche, PhD, Nuclear Engineering; Chemical Engineering, Nuclear Engineering, Nuclear Physics	32	32
<u>DISCIPLINE SPECIALIST</u>		
L. A. Keller, MS, Mechanical Engineering; Mechanical Systems, Electrical Systems, Safety Analysis, Licensing	14	14

APPENDIX C

Appendix C lists the Project documents approved by HL&P for reference on Disposition Forms to demonstrate STP cognizance of the substance of an assertion or to demonstrate that the assertion is factually erroneous.

DOCUMENTS TO BE REFERENCED ON DISPOSITION FORMS

A reference to one of the documents or categories of documents in the following list, sufficient to support the disposition, must be included on the Disposition Form whenever the disposition statement concludes that the substance of the assertion has been previously identified by STP or that the assertion is factually erroneous. Dispositions not safety-related must use the reference documents given in SLI Review of COA v. HL&P Litigation Record, Litigation Review Procedure LRP-1, Table 5-1 (also reproduced as Attachment 4-F to this report), "Criteria for Safety Determination."

1. The STP Final Safety Analysis Report (FSAR).
2. HL&P Incident Review Committee (IRC) File material, including 10 CFR 50.55(e) reports.
3. NRC Inspection Reports and HL&P responses to these.
4. Bechtel Energy Corporation (BEC) Design Criteria (DC) for the South Texas Project.
5. Controlled South Texas Project engineering documents. These include, among others:

Piping and Instrument Drawings (P&IDs), Single-Line Drawings,
and General Arrangement Drawings;

Piping Isometric Drawings;

Design Specifications, Criteria, and Calculations;

Stress Reports;

SSC Analyses;

Brown & Root Technical Reference Documents (TRDs);

Bechtel Project Engineering Guidelines (PEDs).

6. The following materials related to the April 30, 1980 Order to Show Cause and HL&P's responses thereto:

NRC Special Investigation of Construction Activities, dated April 30, 1980, and attached materials;

HL&P's May 23, 1980 reply to the NRC's April 30, 1980 Order to Show Cause and attached materials;

Reports prepared by HL&P, B&R, and their consultants on Show Cause issues, specifically:

- i. Expert Committee's Final Report on Adequacy of Category I Structural Backfill, South Texas Project Electric Generating Station to Brown & Root, Inc., by A. J. Hendron, Jr., H. Bolton Seed, Stanley D. Wilson, dated January 30, 1981;
- ii. Interim Report to Brown & Root, Inc., on Adequacy of Category I Structural Backfill, South Texas Project Electric Generating Station by A. J. Hendron, Jr., H. Bolton Seed, Stanley D. Wilson, dated July 12, 1980;
- iii. Letter to J. L. Hawks of Brown & Root, Inc., from J. F. Artuso of Construction Engineering Consultants, Inc., titled: Inspection and Testing for Show Cause Item 3b South Texas Nuclear Power Plant, dated July 25, 1980;
- iv. Final Report of Safety-Related Concrete Show Cause Item 3(b) South Texas Project (no date or author on report);
- v. Review of Safety-Related Welding at South Texas Project Electric Generating Station, Final Report, dated April 1981 (no author listed);
- vi. Revisions to Final Welding Report (see previous items).

7. Technical Evaluation of Anchor Bolts and Imbedded Rods, HL&P Report on Anchor Bolts.
8. B&R and HL&P Deficiency Trending Reports.
9. STP Fire Hazards Analysis Report.
10. STP Technical Specifications.
11. Reports of HL&P Engineering Assurance covering specific areas of STP design.
12. STP Nonconformance Reports (NCRs), providing they have been validated.
13. STP Field Change Requests (FCRs).
14. STP Corrective Action Reports (CARs).
15. STP Standard Deficiency Reports (SDRs).
16. STP Deficiency Notices (DNs).
17. STP Deficiency Evaluation Forms (DEFs).
18. STP Deficiency Evaluation Reports (DERs).
19. STP Audit Deficiency Reports (ADRs).
20. STP Potential Change Notices (PCNs), provided that they have been signed by an HL&P Project Manager.
22. STP Design Change Notices (DCNs), provided that they have been signed by an HL&P Project Manager.
23. Formal memos and letters numbered to the standard STP numbering system (e.g., STP-HL-BR-xxxx, etc.).
24. STP-numbered Purchase Orders and Subcontracts.

25. Reports requested and received by HL&P on specific STP design or construction issues.
26. NRC Commitment Status Report.
27. Licensing Commitment Tracking System for Inspection Report Findings.
28. Safety Evaluation Reports (SERs) related to STP.
29. Licensee Event Reports (LERs).
30. NUREG Reports related to STP (e.g., NUREG 1306, NRC Safety Significance Assessment Team Report).
31. Brown and Root internal memoranda - BC-XXXX which copy HL&P personnel by name and are retrievable through STP Record Management System (RMS).

Documents other than those listed above may be referenced on the Disposition Form to supplement information provided by those documents. However, a Disposition Form must reference those documents listed above which are sufficient to demonstrate independently that the STP has identified the substance of the assertion or that the assertion is factually erroneous.

The version of the Final Safety Analysis Report for the South Texas Project, Units 1 and 2, used by SLI was current through Amendment 61, dated June 16, 1987.

The Bechtel Design Criteria Manual for the South Texas Project used by SLI was current through revisions of February 23, 1988.