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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of ()
()
HOUSTON LIGHTING AND ()
POWER COMPANY, ET AL. ()
(South Texas Project, ()
Units 1 and 2) ()

Docket Nos. 50-498 DL
50-499 DL

CITIZENS CONCERNED ABOUT NUCLEAR POWER (CCANP) BRIEF
IN RESPONSE TO LICENSING BOARD MEMORANDUM AND ORDER
REGARDING THE REQUIREMENTS APPLICABLE TO THE APPLICANTS
TO NOTIFY AND REPORT TO THE NUCLEAR REGULATORY COMMISSION
ABOUT THE QUADREX REPORT AND ITS FINDINGS

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I. Introduction

On June 22, 1983, the Atomic Safety and Licensing Board (ASLB) in this proceeding issued a memorandum and order requiring the NRC Staff to brief several issues concerning the Staff's position on the Applicants handling of the Quadrex Report. See Memorandum and Order (Granting Applicants' Motion to Compel Responses to Certain Discovery Requests, Delineating Procedural Format for Resolving Various Phase II Issues and Establishing Briefing Schedules for Certain Legal Questions) (June 22, 1983) at 6-7.

The issues the ASLB ordered briefed can be enumerated as follows:

(1) A further analysis of the Staff's determination that most of the Quadrex findings are not reportable;

(2) The basis for the Staff's conclusion that various designs reviewed by Quadrex in reaching their findings had not been "released for construction" within the meaning of 10 C.F.R. 50.55(e)(1)(ii);

(3) Whether the description of 10 C.F.R. 50.55(e)(1) by the Commission in the Statement of Considerations for 10 C.F.R. Part 21, as requiring reports and notifications of design or construction deficiencies is consistent with the criteria relied on by the Staff to determine reportability of the Quadrex Report or portions thereof;

(4) A definition of the construction status of each safety-related item dealt with by the Quadrex Report, explaining the basis upon which the Staff determined that the various items had or had not been released for construction;

(5) Whether any or all of the Quadrex Report was reportable under the requirements of 10 C.F.R. Part 21;

(6) Whether any or all of the Quadrex Report was reportable under the notification requirement spelled out in decisions, such as Duke Power Co. (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-143, 6 AEC 623, 625-26 (1973) and Duke Power Co. (Alvin W. Vogtle Nuclear Plant, Units 1 and 2) ALAB-291, 2 NRC 404, 408-12 (1975).

Although the Staff was ordered to file its brief on the foregoing issues at its earliest convenience, the Staff did not file its responses until August 24, 1984, some fourteen months after the ASLB's memorandum and order of June 22, 1983 and a mere forty-two days before the October 5, 1984 submission deadline for parties to submit lists of particular issues suggested for litigation in Phase II of this proceeding. The resulting brief is a less than eleven pages long and fails to address questions required to be briefed by the Board.

While the Board provided the parties thirty (30) days to file briefs after the Staff filing, by agreement of the Board, Staff, Applicants, and Intervenor, this period was extended to October 2, 1984.

II. HL&P should have notified the Nuclear Regulatory Commission of the entire Quadrex Report pursuant to 10 C.F.R. 50.55(e)(1)(i) because the Quadrex report documented a significant breakdown in a portion of the quality assurance program at the South Texas Nuclear Project.

A. 10 C.F.R. 50.55(e) requires holders of construction permits to notify the Nuclear Regulatory Commission Staff of deficiencies in design and construction which might adversely affect the safety of operation of the facility.

Part of the NRC regulations which govern the communication to the Commission by the Applicants of safety related deficiencies in the design and construction process at a nuclear power plant are contained within 10 C.F.R. 50.55(e). The final version of 10 C.F.R. 50.55(e) was published in the Federal Register on March 30, 1972. The comments published in conjunction with the rule help to clarify its general intent and purpose. The Commission explained the necessity for the rule with the following:

"... the rule is necessary so that the AEC staff will have prompt notification of the deficiency and timely information on which to base an evaluation of the potential safety consequences of the deficiency and determine whether further regulatory action is required." 37 Fed. Reg. 6460.

The Commission further stated:

"Notification is required of significant deficiencies in design and construction. The holder of a permit for construction of a nuclear powerplant is required to notify the Commission of each deficiency found in the processes of design, manufacture, fabrication, installation, construction, testing and inspection which were it to have remained uncorrected could have adversely affected the safety of operations" *Id.*

On April 19, 1976, 50.55(e)(2) was amended to change the word promptly to "within 24 hours" so that the regulation then read:

"The holder of a construction permit shall within 24 hours notify the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional office of each reportable deficiency." 10 C.F.R. 50.55(e)(2).

This change in the regulations was viewed by the Commission as minor and was published without the customary notice of proposed rulemaking. The Commission stated that "the amendments do not add any new reporting requirements and do not change the

substantive requirements for such reports." 41 Fed. Reg 16445.

The Regulations and the comments related to 50.55(e) make clear that the intent of the regulations was to provide for extensive reporting of any type of potential deficiency to the NRC Staff. Any errors in reporting should be on the side of overreporting.

After the final adoption of 50.55(e), there remained some confusion as to when the clock began on the 24 hours, i.e. after detection or after an analysis showed the item to be reportable. See Virginia Electric and Power Co. (North Anna Power Station, Units 1 and 2), 7 NRC 295 (1978).

In response to this confusion, the provisions of 50.55(e) were further clarified in guidelines issued by the NRC Staff on April 1, 1980. See Guidance attached to Staff brief as Appendix. In these guidelines, the phrase "could affect adversely" is described as not implying that it would absolutely affect safe operations. Guidance at 3, item 6. Significant is interpreted as having an effect or likely to have an effect on the safe operation of the facility. Guidance at 4, item b.

The guidelines also distinguish between a reportable deficiency and a potentially reportable deficiency. I&E established this distinction

"to alleviate the apparent conflict between prompt notification and necessary evaluation time for those cases where an extended period of time might be necessary to complete an adequate evaluation of the identified deficiency...." Guidance at 6, item e.(2).

A deficiency is potentially reportable if sound judgment would indicate potential significance. It exists when:

"(1) an initial prompt review of available information indicates that the problem could be significant ... but for various reasons, additional time is required to complete the evaluation; (2) the deficiency may be considered significant, but neither a prompt review or full evaluation can be completed within 14 days due to lack of specific information." Guidance at 7.

The criteria set out in the Guidance clarify the regulations and the decision in the VEPCO case. Under this interpretation, most of the findings in the Quadrex report would be potentially reportable. The Applicants had an obligation under 10 C.F.R. 50.55(e) to notify the NRC regional office of such findings or provide a complete copy of the Quadrex Report to the NRC regional office within 24 hours.

10 C.F.R. 50.55(e) states in part:

- (1) If the permit is for construction of a nuclear power plant, the holder of the permit shall notify the Commission of each deficiency found in design and construction, which, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant, and which represents:
 - (i) A significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B; or
 - (ii) A significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria and bases stated in the safety analysis report or construction permit; or
 - (iii) A significant deficiency in construction of or significant damage to a structure, system, or component which will require extensive evaluation, extensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function; or

- (iv) A significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of a structure, system, or component to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function. (emphasis added)

These four criteria are independent of each other. The first criteria applies to the quality assurance program which must be conducted adequately throughout the life of the project. The other three criteria apply to more specific events during the life of the project - a design with a significant deficiency turned over to construction, construction building something with a significant defect, or a completed piece of work not meeting its performance specifications.

Subsection 2 of 50.55(e) requires the holder of the construction permit to "notify" the appropriate Nuclear Regulatory Commission Inspection and Enforcement Regional Office of each potentially reportable or reportable deficiency with 24 hours. Subsection 3 additionally requires the holder of a construction permit to submit a written report on the deficiency within thirty (30) days of the prior notification. If thirty days is insufficient time for analysis and evaluation of the problem, the holder of the construction permit must file an interim report containing all available information, together with a statement as to when a complete report will be filed.

The Applicants' failure to notify the NRC within 24 hours from the time HL&P became aware of the prospective findings of the Quadrex Report (long before the final report was actually

issued by the Quadrex Corporation) reflects badly on the character and competence of the Applicants and on their ability to manage the construction and operation of a nuclear power plant. It is the "notification" requirement that is the essence of the issue of the "reportability" of the Quadrex Report.

Based on its conclusions that the various design problems uncovered by the Quadrex Report had not been "released for construction," the Staff takes the position that the NRC Staff did not have to be notified within 24 hours of the preliminary findings of the Quadrex Corporation or of the final report.

The Staff's position is indefensible for a number of reasons. First, the Staff's position erroneously imposes the specific "released for construction" requirement of section (e)(1)(ii) on the "significant breakdown in any portion of the quality assurance program" criterion of section (e)(1)(i).

Second, the Staff has yet to provide the Board and parties with the factual basis for its conclusion that the design problems uncovered by the Quadrex Report had not been "released for construction." Finally, the Staff freely relies on the massive and time consuming reviews of the Quadrex Report conducted by the Staff and the Bechtel Power Corporation. Such reliance is a typical example of "perfect hindsight" reasoning and ignores the critical question on notification: "What did Houston Lighting and Power know and when did they know it?" A review of the findings of the Quadrex Report in light of the knowledge available at the time that Quadrex communicated their findings to HL&P demonstrates that the NRC should have been notified within 24 hours.

B. The I&E Guidance for reportability expressly provides for notification of the Nuclear Regulatory Commission Staff of "potentially reportable deficiencies."

The Staff relies heavily on the NRC Office of Inspection and Enforcement document promulgated in April 1980 for guidance on the reporting requirements of 50.55(e). Nevertheless, the history of 50.55(e)'s adoption, the plain language of the regulation, and the guidance document make clear that the "released for construction" requirement of section (1)(ii) does not subsume section (1)(i). As noted earlier, the Commission applied the notification and reporting requirement to the "processes of design," not simply the products. 37 Fed. Reg. 6460. Thus, CCANP directly challenges the Staff's assertion that:

"while significant quality assurance breakdowns could conceivably be indicated in a design effort review, such breakdowns would not have the potential to adversely affect the safe operation of the plant unless the designs had received approval to be released for construction." (emphasis added) Staff brief at 4.

This conclusion is particularly suspect given the fact that the Quadrex Report was based on a statistical sampling program "because an exhaustive review of the design work accomplished by each B&R technical discipline was neither feasible nor desired. Report stressed that "there may still be other concerns in the SIP design that were not detected by this design review program because of the nature of the sampling process used." (emphasis added) *Id.* at 1-3.

Furthermore, the Staff is applying a very narrow scope to the word potential by taking the position that only a design

released to construction has the potential to adversely affect the safe operation of the plant if not corrected. If a design is released for construction, construction will in fact build it as designed and inspection will only concern itself with whether the construction conforms to the design as released. A defective design released to construction is, therefore, far closer to actually, rather than potentially, affecting safety and, probably for this reason, is singled out in 50.55(e)(1)(ii).

The potential to adversely affect safety exists once the defect is in the design at any stage of the design process because the possibility exists the defect will not be detected and corrected. The potential is all but realized by the time the design is released to construction.

Finally, the Guidance provided by the Staff states:

"The fact that a deficiency is obvious and could not possibly go uncorrected and therefore could not adversely affect safe operation does not negate the requirement to formally report the deficiency if it meets the criteria of 50.55(e)." Guidance at 4.

If an obvious deficiency which could not possibly have gone uncorrected can meet the criterion that it could potentially affect safety, the threshold for finding such potential is in fact very low, and this aspect of the notification/reportability requirement is very broad. The Staff sets far too high a threshold for design deficiencies potentially affecting safety by requiring they must have been released to construction before they have such a potential.

The Guidance clarifies the phrases used in 10 C.F.R. 50.55(e). The phrase "could adversely affect" is clarified as follows:

"If a deficiency meets all the criteria and it could affect adversely safe operations of the facility, it is reportable. 'Could' does not imply that it would absolutely adversely affect safe operations. It implies a probability that safe operations may be adversely affected if the proper conditions existed. 'At any time' means that all service and accident conditions of operation must be considered." (emphasis in original) Guidance at 3, item 6.a.

Thus, the mere fact that the designs, according to the Staff, have not been released for construction, is irrelevant if the deficiencies indicate a significant breakdown in the quality assurance program which could adversely affect the safety of the plant if not corrected.

The Guidance clarifies that the phrase "significant" means "having an effect or likely to have an effect on the safe operation of the facility in an adverse manner" and is not solely limited to "safety-related" structures, systems, or components (SSCs):

"The 50.55(e) requirement applies to any structure, system, or component (SSCs) if it contains a deficiency which were it to have remained uncorrected could have affected adversely the safety of operation of the facility. This includes those SSCs that, even if not classified as safety related, could cause or contribute to the degradation of integral plant safety as a result of an adverse interaction with safety related SSCs. Primary examples of this are undesirable conditions or failures in a nonsafety system, structure, or component which could impact or degrade safety systems or a safety function." (emphasis in original) Guidance at 4, item b.(1).

Once again the plain language of the regulation and the Guidance indicate that the NRC must be notified of a deficiency which "were it to have remained uncorrected" could have adversely affected the safety of the operation of the facility.

The Guidance explicitly describes what constitutes a breakdown in the quality assurance program as follows:

"A breakdown in the QA program related to any criteria of 10 CFR 50, Appendix B, may be a reportable deficiency depending upon its significance. This applies to those design and construction activities affecting the safety of plant operations, including activities such as design verification, inspection, and auditing. For example, QA program breakdown may result from an improper identification system for safety related materials. More specifically, the implementing procedures may be incomplete or otherwise inadequate, or the execution of adequate procedures may be incomplete, improper or completely ignored. In the latter case, not following established procedures to assure that specified quality related requirements are met, for example, may constitute a breakdown in the QA program that is reportable.

Similarly, an inadequate record keeping system that makes it impossible on a broad scale to determine whether quality requirements have been met, is another example. In such a case extensive evaluation and testing may be required to establish that applicable requirements have been met." Guidance at 5, item d.

As described more fully below in Section II.D. of this brief, these are precisely the type of findings which the Quadrex Report contains.

Although the Staff believes that the "triggering point" in 50.55(e) for notification of design deficiencies is whether it is a "final design as approved and released for construction," Staff brief at 4, the Guidance suggests a different "triggering point." Notification is required within 24 hours after the licensee (or construction permit holder) "becomes aware" of the potentially reportable or reportable deficiency.

"Aware of the deficiency means that any cognizant licensee individual has knowledge of the deficiency as a result of:

(d) observation of condition

(e) a formal submittal by any organization involved in the design, construction, evaluations or inspection of the facility

(f) an informal report, or allegation, by any organization or person." Guidance at 6, item e.(1).

The Quadrex Report clearly falls under the type of report of which the NRC should be notified.

A final indicator that the Quadrex Report falls into the notifiable category is the Guidance's enforcement section. The NRC Staff inspector can validly exercise his option and challenge the nonreportability of an item if:

(1) the evaluation is clearly faulty because facts are omitted;

(2) engineering or other calculations are in error;

(3) the evaluation is not supported by adequate records;

(4) the evaluation has not considered interactions;

(5) past I&E experience provides a basis of precedent for notification/reportability;

(6) the licensee has a pattern of habitually evaluating deficiencies as non-reportable;

(7) the evaluation is performed by people without adequate expertise. Guidance at 8-9, item 7.

As more fully described below, see infra p. 22-24, several of these conditions are specifically indicated by the Quadrex Report itself and by the history of the decision not to notify the NRC of most of the findings in the Quadrex Report.

C. The Staff has failed to provide the basis for its conclusion that various designs had not been released for construction.

In its Memorandum and Order of June 22, 1983, the ASLB ordered the Staff to provide the basis for the Staff's conclusion that various designs had not been released for

construction

"within the meaning of 10 CFR Section 50.55(e)(1)(ii) and to provide a definition of the construction status of each safety-related item dealt with by the Quadrex Report explaining the basis upon which the Staff determined that the various items had or had not been released for construction." Memorandum and Order, supra p. 1 at 7.

The Staff responded by assigning each Quadrex item into one of seven categories of nonreportability. CCANP moves the Board to grant discovery and require testimony from the Staff concerning the basis for so categorizing the individual items in the Quadrex Report.

CCANP also reiterates the Commission position cited earlier, supra p. 3, that the requirements of 50.55(e) apply to the processes of design. The Staff has one category of nonreportability as "Design activities still in progress." Staff brief at 9. At least 27 Quadrex findings are classified as nonreportable through use of this category. The category ignores the Commission position on applicability of 50.55(e), ignores the distinction between 50.55(e)(1)(ii) and (i), and eliminates the entire design process until a design is released for construction from the coverage of 50.55(e). For the Staff to so thoroughly abandon its regulatory authority and duties is symptomatic of how far the Staff must go to protect the Applicants from their own malfeasance.

In addressing whether the designs reviewed by Quadrex were released for construction or not, the Staff has taken an internally inconsistent position with regard to whether its conclusions that various designs were or were not released for construction are an objective or subjective judgment.

On the one hand, the Staff relies at a general level on the document control procedures of Brown and Root, the fired contractor:

"[A] determination of whether items were released for construction at South Texas does not depend on subjective analysis or design judgment. As indicated in the attached procedure, designs were indicated as issued preliminary, issued for use, issued for construction, or issued for review. The use of a drawing was dependent on its status; to be involved in construction, drawings must have been designated as 'issued for construction.' Thus there is a direct indication of items 'released for construction.' Staff brief at 9.

The Staff's reliance on Brown and Root's procedures is critical to its argument that the Quadrex Report was not notifiable pursuant to 10 CFR 50.55(e). Moreover, as indicated above, the Staff feels that these procedures were accurate and direct. Yet even with this bias, the Staff failed to review the "release for construction status" of each safety-related item as ordered by the Board on June 22, 1983.

The Staff gives the following contradictory excuse for failing to perform the task ordered by the Board:

"In attempting to respond to the Board's request by again subjectively determining whether an item had been released for construction, the Staff discovered that the information necessary for such a response is difficult to obtain and would require a reexamination of not only the Quadrex work package, but a winnowing out from all South Texas drawings of those relevant to each work package." Staff brief at 10.

Therefore, at one and the same time, the Staff assures the Board that the not released for construction status is based solely on objective drawing control procedures and that the verification of this statement as ordered by the Board is subjective and too difficult to complete.

CCANP desires an opportunity to discover and cross-examine the Staff with regard to its determination that the designs were released for construction as this is the crucial ground supporting the Staff's position that the Quadrex Report need not have been reported. CCANP also moves the Board to order the Staff to comply with the Board's request of June 22, 1983 well in advance of the Phase II hearings by specifically providing the Staff's basis for concluding that each design reviewed by Quadrex had or had not been released for construction. Until the Staff complies with the Board's order, CCANP sees no reason to hold any hearings.

In addition, the Staff's entire approach is questionable since the Quadrex Report specifically states that among the basic objectives of the Quadrex study were:

- "1. The technical adequacy or inadequacy of the B&R design output was to be determined ...;
- ...
3. The design basis and criteria chosen by each discipline, and evidence of their implementation in the SIP design was to be included;
- ...
6. Particular attention was to be given to the B&R design verification process" (emphasis partially in the original) Quadrex Report at 1-2.

CCANP suspects that the real problem here is that the Staff has created a false issue in order to reach a conclusion which permits the Applicants to escape enforcement action. In the State of Texas' Deposition of Quadrex Corporation on Written Interrogatories, Interrogatory 6 asked:

"Did the Quadrex review confine itself to drawings which had not yet been released for use by construction?"

The Quadrex Corporation responded as follows:

"Quadrex did not confine itself to drawings which had not yet been released for use by construction. Answers to Quadrex questions were supplied by B&R. There were no limitations specified by Quadrex as to the sources of information that B&R could use for their answers."

Furthermore, the question before the ASLB is whether the Applicants, not Quadrex and not B&R, had a basis for not notifying the Commission about the findings of the Quadrex Report. If it is the Staff's (or Applicants') position that HL&P knew the designs reviewed had not been released for construction, the Applicants' answers to the State of Texas interrogatories foreclose that possibility.

The State of Texas Interrogatory 18a. to Applicants asked:

"Were all documents requested in the January 19, January 20, and February 2, 1981 letters from Loren Stanley to Dr. J. R. Sumpter in fact provided for Quadrex review?"

Applicants' answer is:

"As far as Applicants are aware, Quadrex received sufficient information to complete its review. Applicants do not know if all of the documents requested in those letters were provided. After Dr. Sumpter gave the requests to Brown and Root, documents were generally transmitted directly from Brown and Root to Quadrex without HL&P involvement." (emphasis added).

The State of Texas Interrogatory 18c. to Applicants asked:

"For each drawing supplied to Quadrex, please specify whether at the time supplied or at any time prior to May 7, 1981 that drawing had been used by construction."

Applicants' answer is:

"Applicants do not have a list of drawings supplied to Quadrex. In general the documents reviewed by Quadrex were System Design Descriptions, Technical Reference Documents, one line electrical drawings, piping and instrumentation drawings, calculations and similar types of design documents that are not directly used as construction drawings. Thus, few, if any, of the documents supplied to Quadrex were appropriate for use

in field construction." (emphasis added)

These answers provide a direct challenge to the Staff position. First, Quadrex did not limit itself or B&R to designs not yet released for construction. Second, HL&P was not part of the process by which documents passed between B&R and Quadrex and, therefore, could have no first hand knowledge of what Quadrex did or did not look at. Third, HL&P even today has no list of the drawing Quadrex looked at. Fourth, HL&P believes that most of what Quadrex looked at were the reference documents from which designs were generated, not actual designs.

These reference documents are outside the scope of 50.55(e)(1)(ii) but clearly within the scope of 50.55(e)(1)(i) in that a defect in an underlying document from which designs were generated would represent a breakdown in the quality assurance program for design. Furthermore since the effect of a defect in an underlying document would be generic rather than limited to one specific design, the breakdown would be clearly significant.

Thus, the Staff's conclusion that there is no violation of 50.55(e) in the Applicants' handling of the Quadrex Report is based on denying the Quadrex Corporation's own description of the objectives of the study, on creating a nonexistent limitation on the material Quadrex looked at, and on attributing to the Applicants information the Applicants simply did not have.

The Staff also misdirects attention away from the Quadrex findings of defects in the underlying design documents. Staff offers no analysis as to why the defects in the underlying

documents do not represent a significant breakdown in a portion of the quality assurance program other than to try to define any design work in process as outside the scope of 50.55(e).

The Staff brief is, therefore, totally inadequate in not answering the Board's order, irrelevant in postulating circumstances that simply did not exist, and incomplete in not addressing all the Quadrex findings as to the application of 50.55(e)(1)(i). CCANP moves the Board to require the Staff to brief the question of why the defects (or missing documents) found by the Quadrex Corporation in the underlying design documents do not constitute a significant breakdown in the quality assurance program. CCANP further moves the Board to require the Staff to brief the issues delineated by the Board without making unsupportable assumptions about what the Quadrex Corporation looked at or what information was available to HL&P on May 7-8, 1981.

D. At least at the time of its formal receipt by Applicants, the Applicants should have turned the report over to the Nuclear Regulatory Commission Staff.

The Staff, contrary to any direction from the Board, did not analyze the 17 Generic Quadrex Findings because the Staff feels that "these findings are based on an evaluation of the discipline findings and do not represent new findings." Staff Brief at 9. It is CCANP's position that the notification requirements of 10 C.F.R. 50.55(e) do not distinguish between primary and derivative "allegations." See Guidance at 6, item 6(e)(2). CCANP would also note that the Staff's conclusion is apparently based on the months of research and review by the

Bechtel Power Corporation, which was certainly not available to HL&P within the 24 hour notification period.

The Staff and HL&P have both gone to great lengths to disown the generic findings, to characterize them as no more than the simple sum of the specific findings and, therefore, unworthy of separate analysis.

But the Quadrex Report gives a different view of the importance of the generic findings. Quadrex notes that the

"chosen sampling approach does provide indications of potentially weak areas in the engineering design of the STP plant. Consequently, these indications are being brought to the attention of HL&P so that they may inquire further into the specific details and characterizations regarding each issue with Brown and Root, Inc." (emphasis added) Quadrex Report at 1-1.

In discussing the determination of "technical adequacy," the Quadrex Corporation noted:

"(3) the identified concerns are regarded to be 'indicative' of the technical problems present in the design." Id. at 1-3.

Quadrex describes Section 3 of the report as presenting "generic observations and findings developed for an overview of all involved B&R disciplines...." Id. at 1-3.

The types of information Quadrex stated that it sought are illustrated by the following questions, among others:

"(n) ... Is there a generic problem or are they individual problems each of limited scope?" (emphasis added) Id. at 2-14

In setting forth their general view of the study, the Quadrex reviews state:

"In addition to the Section 4 assessment of design output technical adequacy, for each discipline, the extensive exposure of Quadrex reviewers to these varied B&R engineering disciplines over a six week period has provided a clear indication that certain

practices, policies, and procedures adopted by B&R continue to have a generic impact on most, if not all, of the technical disciplines. These observations are provided in Section 3 of the executive summary." (emphasis added) Id. at 2-15.

In describing the generic findings, the Quadrex report states:

"These findings are applicable to most, if not all, of the disciplines involved in this study, and are based on the detailed evaluations of each discipline presented in Section 4 of this report." (emphasis added) Id. at 3-1.

How much clearer could it be that the Quadrex Corporation based the generic findings on the findings within the disciplines but believed the generic findings to apply far more widely than just the specific instances on which they were based? They are not "new" findings in the sense of being different than the specific findings, but the implication of the generic findings is new, i.e. that the problem identified may well exist throughout most of the design process, not just the sampled activity.

There is simply no justification for the Staff refusing to do an analysis of the generic findings when responding to the Board's order of June 22, 1983. CCANP moves the Board to require the Staff to brief the absence of any notification or reporting requirement for the generic findings prior to the commencement of any hearings on Phase II.

Equally important is the fact that the generic findings clearly point to a serious breakdown in the quality assurance program. When Bechtel Power Corporation addressed the generic findings, the findings were considered resolved in part because:

"Bechtel will conduct future project activities in a manner which should preclude the types of deficiencies described in the Quadrex Report. This will be accomplished by the use of Bechtel Engineering Department Procedures, Table 1, which will be followed in the performance of future design activities for the project. These procedures are based upon those used effectively for engineering activities performed at other major nuclear projects. The effective use of these procedures is assured by the on-project indoctrination, training, monitoring, and the Quality Assurance Audit Program." South Texas Project; Houston Lighting and Power Company; Transition Phase Final Report; Work Package Title: Review of the Quadrex Report; Log Number: EN-619 at 11.

In other words, Bechtel intends to prevent the types of deficiencies identified in the generic findings through various means, including a Quality Assurance Audit Program. If such a program is supposed to prevent such deficiencies, the presence of such deficiencies is a clear indication of a breakdown in the quality assurance program.

Even the NRC has publicly taken the position that the Quadrex Report represented a breach in quality assurance. Mr. William Dircks, NRC Executive Director for Operations, testified before Congress as follows:

"Though we were aware of Quality Assurance problems at South Texas and had cited the licensee for a breakdown in their quality assurance program in April 1980, the magnitude of potential problems was not fully appreciated until we first examined the [Quadrex] Report in August 1981." (emphasis added) Testimony of William J. Dircks Before the Subcommittee on Energy and the Environment of the Committee on Interior and Insular Affairs, United States House of Representatives, Washington, D.C., November 19, 1981.

In refusing to consider the Quadrex findings as representing a breakdown in the quality assurance program requiring notification under 50.55(e)(1)(i), the Staff distorts the plain meaning of the explanations of the study provided by

the Quadrex Corporation, ignores the recognition by Bechtel that prevention of such findings is a quality assurance problem, and rejects the characterization of the Quadrex Report provided under oath to the Congress of the United States by the Director of Operations for the agency employing the Staff. Such a bold position should be supported by more than a few pages of contradictory and self-serving analysis.

A closer look at NRC regulations and the Quadrex Report demonstrates clearly that a major breakdown in the quality assurance program has taken place. 10 C.F.R. Part 50, Appendix B governs the creation and implementation of a quality assurance program. The introduction to Appendix B states:

"As used in this appendix, 'quality assurance' comprises all those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service." (emphasis added)

The particular section of Appendix B which applies to design is Criterion III - Design Control, which states in part:

"These [design control] measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. ... Measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations. ... The design measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program."

The following selection of generic findings clearly violate the requirements of Appendix B as quoted above:

"There is no indication that an effective systems integration and overview function exists within the B&R design process. [The phrasing of this finding is a clear indication that in the generic findings Quadrex

is attempting to address the "B&R design process," as opposed to making a specific finding of deficiency in a given document or drawing.]

Plant arrangements and equipment layout that take into account such factors as physical separation, system and equipment performance compatibility, access for maintenance and ISI, and other similar aspects, can be too easily overlooked or missed with the present design review process.

...
A major concern is with the achievement of internal consistency among various design documents and the maintenance of that consistency over time with personnel turnover." Quadrex Report at 3-1 - 3-2.

"(1) Input data to a technical group does not appear to be consistently reviewed by that group for its reasonableness prior to use Conversely, the technical groups do not consistently check to see that their output data is used correctly.

...
(2) Calculations containing errors are being reviewed and verified as correct with a higher frequency than should be encountered" Id. at 3-3.

"In several instances, design activities that affected plant safety were designated as non-S/R [safety-related].

...
It was frequently stated during the design review that only NRC requirements must be met whether or not those requirements are accurate, reasonable, or even meet the intent of the regulations. There has been no planned effort to review new NRC requirement (excluding TMI-2 concerns) to determine their impact on STP, and propose recommendations for HL&P concurrence" Id. 3-6.

"There was no documented evidence for assuring that individual FSAR commitments for systems, equipment or calculations were being systematically implemented into the design.

There were many inconsistencies noted between the FSAR and other design and procurement documents. There was no assurance that subcontractor methodology changes would be reflected in the FSAR commitments. For example, numerous differences were observed between EDS practices and the FSAR promises.

...
A consistent and documented B&R position regarding Code and Standards interpretations was not evident. These interpretations are left to individuals or to vendor suppliers. The ASME code interpretation area

appears to be particularly weak" Id. at 3-7 - 3-8.

"There was very little evidence of a well-thought-out and consistent basis for design. Much of the plant design basis is rooted solely in engineering judgment, and the rationale for this judgment has not been documented in a retrievable manner. Personnel turnover can adversely impact this approach.

No document exists that identifies the interface design information required by each discipline from the other technical disciplines [M]uch of the design is based on unverified preliminary data which could cause problems if the data is later shown to be inadequate. A possible cause for extensive use of preliminary data may be that construction pressures controlled the Engineering schedule.

A number of key front-end criteria documents are missing for STP. A plan to identify and develop these TRDs on the project was not evident. Prior to mid-1980, it does not appear that B&R recognized that fact. For instance, a number of these documents have either been recently issued or are currently undergoing review prior to initial issue, such as:

- (1) Safety-Related Classification
- (2) In-service Inspection TRD
- (3) Environmental Qualifications TRD" Id. at 3-8 - 3-9.

"The absence of specific reliability requirements in both mechanical and electrical equipment specifications, and the inability to produce a standard checklist of postulated failures to be considered casts doubt on the rigor of the safety-related evaluation process." Id. at 3-11.

"[F]or the nuclear aspects of the project, Brown and Root has been much less adequate in its choice of analysis methods and assumptions. In addition, an abnormally high error rate was observed in these calculations." Id. at 3-11.

"[T]here is evidence that the key design verification questions are not being adequately considered (e.g. are the assumptions valid, are the input and output reasonable)." Id. at 3-13.

Laying these findings side by side with Appendix B, especially Criterion III, the necessity of notifying the NRC of these findings is simply irrefutable and unmistakable.

It is not unreasonable to conclude that the drafters of the Quadrex Report themselves envisioned that the report or many of its findings would be turned over to the NRC.

I&E Report 82-02 contains an account of an interview with Mr. Loren Stanley, the primary author of the Quadrex Report. "He stated it was an assumption of his, not based on anything HL&P had said, that the report would be provided to NRC soon after it had been given to HL&P." I&E 82-02 at 13. In fact, it is clear from a copy of Mr. Goldberg's April 15, 1981 letter to Mr. J.R. Sumpter with notes by Mr. Stanley, provided and identified by Quadrex Corporation in response to State of Texas Deposition of Quadrex Corporation on Written Interrogatories #13b and attached hereto as Exhibit 1, that there was clearly in mind from the beginning that the most serious category would contain the potentially reportable items requiring 50.55(e) notification.

A common sense reading of the Quadrex definition of the Most Serious findings reinforces this conclusion:

"Most Serious Findings are those that pose a serious threat to plant licensability because either (a) the finding would prevent the obtaining of a license, or (b) the finding could produce a significant delay in getting a license, or (c) the finding addresses a matter of serious concern to the NRC at this time." (emphasis in original) Quadrex Report at 3-1.

There are 120 findings categorized as Most Serious. See Special Inspection Report of the Quadrex Corporation Report on Design Review of Brown and Root Engineering Work for the South Texas Project Units 1 and 2, NUREG-0948 at 7. In the twenty four hour period of May 7-8, 1981, given the definition of this category, there is simply no way the Applicants could have gathered enough information to preclude notification to the NRC

of these 120 findings and given that such findings represent more than one third of the total findings, the logical course of action was to turn over the entire report.

III. The Quadrex Report was reportable under the notification requirement of the Duke Power Co. decisions.

CCANP and the Staff are in total agreement that the Quadrex Report was relevant and material to the issues addressed in Phase I, "raising as it does important questions relative to the design work of Brown and Root and the quality control in that design, necessarily rais[ing] related questions on the adequacy of the construction work at the site." Staff brief at 8. Certainly the report was significant enough to the Board when they finally saw it to be part of the cause for the scheduling of a special hearing to consider among other things whether some or all safety-related work should be stopped. See Memorandum and Order (Scheduling Prehearing Conference and Evidentiary Hearing on Transition Period Construction Activities) (October 30, 1981).

The principle that any and all parties must inform the presiding ASLB of new information which is relevant and material to the matters being adjudicated has long been held by the NRC (and previously by the AEC):

"If the presiding board and other parties are not informed in a timely manner of such changes, the inescapable result will be that reasoned decision-making would suffer. Indeed, the adjudication could become meaningless, for adjudication boards would be passing upon evidence which would not accurately reflect existing facts. The disclosure requirement we impose is not the product of any overly procedural formalism on our part. It goes to the very heart of the adjudicatory process. Its sacrifice for the sake

of expediency cannot be justified and will not be tolerated." Duke Power Co. (McGuire Station, Units 1 and 2), ALAB-143, 6 AEC 623, 625-26 (1973); in accord, see Duke Power Co. (Catawba Station, Units 1 and 2), ALAB-355, 4 NRC 397, 406 n.26 (1976) ("It cannot be overemphasized that it is of the utmost importance for parties to keep the board abreast of changing circumstances bearing on their cases."; Georgia Power Co. (Vogtle Plant, Units 1 and 2), ALAB-291, 1 NRC 404, 408-12 (1975).

Parties in NRC proceedings have an absolute obligation to alert adjudicatory bodies directly regarding (i) new information that is relevant and material to the matter being adjudicated, (ii) modifications and rescissions of important evidentiary submissions, and (iii) outdated or incorrect information on which the board may rely. Tennessee Valley Authority (Browns Ferry Plant, Units 1, 2, and 3), ALAB-677, 15 NRC 1387 (1982).

This reporting requirement equally applies to the parties' counsel. Counsel appearing before an ASLB or Appeal Board or other NRC adjudicatory tribunal have a manifest and iron-clad obligation of candor. Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2), ALAB-505, 8 NRC 527, 532 (1978).

The obligation to provide all relevant information to an ASLB was not met by either the Applicants or their counsel when the Quadrex Report was not released to the ASLB in this proceeding between May 8 and September 24, 1981.

While the libraries in Austin, Texas did not contain a copy of the opinion in Metropolitan Edison Co. (Three Mile Island Station, Unit 1), ALAB-774, 19 NRC ____ (Slip Op. June 19, 1984), apparently the opinion is very supportive of the requirements of notifying NRC adjudicatory bodies of relevant information.

CCANP contends that the Staff has taken an internally inconsistent position by arguing that although the Quadrex Report need not have been reported to the NRC Staff pursuant to 10 C.F.R. 50.55(e), it nevertheless needed to be reported to the ASLB pursuant to the McGuire rule. How could the Quadrex Report, "raising as it does important questions relative to the design work of Brown and Root and the quality control in that design," Staff brief at B, not indicate "a significant breakdown in any portion of the quality assurance" pursuant to 10 C.F.R. 50.55(e)(1)(i)?

IV. Conclusion

The Quadrex Report results, regardless of their form, should have been transmitted to the NRC no later than 24 hours after their receipt by Houston Lighting and Power pursuant to 50.55(e)(1)(i). The Staff has yet to provide the Board or parties with the basis of the Staff's conclusion that the design deficiencies uncovered by the Quadrex Report were not released for construction. There are significant indications that the central issue is not "designs" at all, but rather the underlying process leading to the designs, an underlying process the Staff insists has no quality assurance implications.

CCANP contends that the hindsight reviews of the Quadrex Report by the Staff and the Bechtel Power Corporation are irrelevant to the critical questions: "What did HL&P know and when did they know it?"

Because CCANP and the Staff are in agreement that the Quadrex Report should have been presented to the ASLB pursuant

to the McGuire rule, such an inquiry is relevant to the issue whether HL&P and its attorneys have made material misrepresentations and omissions to the Board with regard to the existence and handling of the Quadrex Report.

The CCANP motions set forth in this brief are as follows:

(1) That the Board compel the NRC Staff to brief the basis for their conclusion that designs reviewed by Quadrex had or had not been released for construction;

(2) That the Board compel the NRC Staff to brief the basis for the absence of a notification or reporting requirement for the underlying design documents;

(3) That the Board compel the Staff to brief the issues delineated by the Board without making unsupportable assumptions about what the Quadrex Corporation looked at or what information was available to HL&P on May 7-8, 1981;

(4) That the Board compel the NRC Staff to brief the basis for the absence of a notification or reporting requirement for the generic findings;

(5) That the Board not schedule hearings in Phase II until such time as the Staff has briefed the four questions set forth herein;

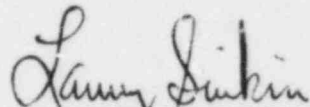
(6) That the Board grant discovery on the basis for the Staff's categories of nonreportability;

(7) That the Board grant discovery on whether designs reviewed by Quadrex were or were not released for construction.

Throughout the preparation of this brief, CCANP has had the sense that the answer to the notification inquiry is manifestly obvious and that the Staff position is so clearly in error that

the Commission should be made aware in some fashion of the Staff's failure to regulate. Having completed the brief, CCANP is convinced the violations of 10 C.F.R. 50.55(e) and the McGuire rule are so indisputable as to be an appropriate subject for summary disposition.

Respectfully submitted,



Lanny Spnkin

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Houston Lighting & Power Company

OFFICE MEMORANDUM

To J. R. Sumpter

April 15, 1981

From J. H. Colberg *JHC*

Subject Quadrex Review of Brown & Root Engineering Problem Categorization:

Confirming our discussions of April 13, I would like the Quadrex review to identify the various findings with an appropriate problem categorization. Below is listed the system that I prefer them to use:

(M)

- A. Most Serious - These problems pose a serious threat to plant licensability in that we have not satisfied NRC requirements applicable to STP.
- B. Serious - These problems pose a concern for the plant to generate reliable power (excluding those contained in Cat. A.)
- C. Noteworthy - These problems contribute to project schedule and/or cost increases while not posing a concern for either licensability or reliability.
- D. Potential - These problems may or may not exist. Further investigation is required to definitise. Once confirmed, they would fall into one of the above categories.

*1) PREVENT FROM RECEIVING A LICENSE
 2) COULD DELAY GETTING A LICENSE
 3) NRC FEELS ARE SERIOUS MATTERS*

JHG/sra
cc: D. G. Barker

SECRET

*A. SIGNIFICANT LICENSING - REPAIRS
 10 CFR 55(b)
 LACK OF CONSIDERATION OF NEW
 NRC INPUTS OR
 B. SERIOUS - ~~THIS~~ IS A PROBLEM
 BUT NO LICENSING IMPACT*

*C. POTENTIAL - MAY OR MAY NOT
 BE A PROBLEM
 COLLECTIBLE - OVER-CONSERVATIVES*

*A-1 potentially report
 A-2 FSAR correction
 or something that
 licensing should look at*

*B
 C
 D
 E too late; doesn't
 matter; minor
 uneconomic past
 practices*

D. UNECONOMIC

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

DOCKETED
USNRC

84 OCT -3 11:00

In the Matter of ()
()
HOUSTON LIGHTING AND ()
POWER COMPANY, ET AL. ()
(South Texas Project, ()
Units 1 and 2) ()

Docket Nos. 50-488-101 OF SECRETARY
50-490-101 LICENSING & SERVICE
BRANCH

CERTIFICATE OF SERVICE

I hereby certify that copies of CITIZENS CONCERNED ABOUT NUCLEAR POWER, INC. (CCANP) BRIEF IN RESPONSE TO LICENSING BOARD MEMORANDUM AND ORDER REGARDING THE REQUIREMENTS APPLICABLE TO THE APPLICANTS TO NOTIFY AND REPORT TO THE NUCLEAR REGULATORY COMMISSION ABOUT THE QUADREX REPORT AND ITS FINDINGS were served by Express Mail (*) or by deposit in the U.S. Mail, first class postage paid to the following individuals and entities on the 1st day of October 1984.

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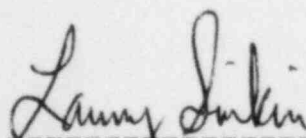
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