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Christopher I. Grimes, Director
Office of Special Projects
Comanche Peak Project Division
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: TEXAS UTILITIES ELECTRIC COMPANY, ET. AL.
(COMANCHE PEAK STEAM ELECTRIC STATION,
UNITS 1 AND 2)
DOCKET NO.: 50-445/446-OL;
ANALYTICAL EVALUATION OF STATION SERVICE
WATER SYSTEM FOR COMANCHE PEAK, BY CASE
CONSULTANT JACK DOYLE
FINAL REPORT, REV. 0, DECEMBER 31, 1989

Dear Mr. Grimes,

Citizens Association for Sound Energy (CASE) has submitted to Texas Utilities Electric Company (TU Electric) a copy of a report by CASE's consultant Jack Doyle, entitled "Analytical Evaluation of Station Service Water System for Comanche Peak." A copy of that report is being sent to you under separate cover for your consideration and review. The report is being submitted to the Office of Special Projects (OSP) pursuant to Paragraph B.7 of the Joint Stipulation for the Staff's consideration as it continues to evaluate and reconsider enforcement action in regards to the events and incidents surrounding the removal of the plasite liner in the Station Service Water System (SSWS) in the Spring of 1988,¹ the failure to identify the precursor events to the Auxiliary Feedwater System check valve failure in

¹ See, September 23, 1989 letter from Billie Pirner Garde, CASE to Christopher Grimes, NRC; Re: Service Water System Enforcement Action (EA 88-310) Docket No. 50-445/446; Permit No. CPPR-126.

May, 1989,² and ultimately the readiness of TU Electric to receive permission to load fuel and a license to operate the plant.³

I. BACKGROUND

As you know, Mr. Doyle has been actively involved in various aspects of evaluating the safety of the Comanche Peak facility since 1981, when he first worked in the frame analysis group at the plant, and later as a witness and technical consultant for CASE in the NRC operating license proceedings.⁴ Since the July, 1988 settlement, Mr. Doyle has been actively engaged in continuing to monitor the safety of Comanche Peak in support of CASE President Mrs. Juanita Ellis in meeting her obligations as a regular member of the TU Electric Operations Review Committee (ORC).⁵ Throughout this time frame, Mr. Doyle has developed in-depth knowledge of the design and construction of the Comanche Peak facility, and is in a unique position to observe and evaluate the institutional character and competence of TU Electric and its various subcontractors.

CASE has relied heavily on the opinions and work of Mr.

² See, September 23, 1989, letter from Billie Pirner Garde, CASE to Christopher Grimes, NRC; Re: Auxiliary Feedwater System Check Valves, SDAR: CP-89-015, Docket No. 50-445/446; Permit No. CPPR-126.

³ See, TU Electric letter from William Cahill to Christopher Grimes, NRC dated January 5, 1990, regarding response to NRC Inspection Report 50-445/89-200, Comanche Peak Operational Readiness Assessment Team Inspection.

⁴ See, In the Matter of Texas Utilities Generating Company, et. al., (Comanche Peak Steam Electric Station, Units 1 and 2; Docket 50-445/50-446) MEMORANDUM AND ORDER (Quality Assurance for Design), December 28, 1983, pages 8-10, and CASE Exhibits 669, 669A, 683; see also, Exhibit C attached CASE/TU Settlement Agreement, attached to July 13, 1988, Licensing Board MEMORANDUM AND ORDER (Dismissing Proceedings) and Tr. pps 25293-25295; ASLB Judge Bloch's comments at Tr. pps 25273-25274.

⁵ Mrs. Ellis is appointed to the Operations Review Committee pursuant to Section III of the Settlement Agreement between CASE, Mrs. Ellis, and TU Electric Company. The ORC is required by the Comanche Peak technical specifications and functions as an independent body assigned the responsibility for review of various safety related matters including nuclear power plant operations, nuclear engineering, radiological safety and quality assurance practices among others.

Doyle since his original involvement in the licensing hearings. In fact, his opinion in the Summer of 1988 that TU Electric had turned around its corporate attitude, (i.e., their approach to acknowledgement of past flaws and failures, a new corporate willingness to pursue issues and take appropriate corrective action) was a key element in CASE's decision to exchange a contested operating license challenge for an active role in monitoring the implementation of its corrective action programs and meeting its licensing requirements through the Joint Stipulation.⁶

Mr. Doyle has continued to be involved with evaluating and monitoring TU Electric's implementation of its settlement and regulatory commitments and reviewing various aspects of the plant's preparation for operations. It is in this capacity that he has performed this in-depth analytical evaluation of TU Electric's performance in identifying root causes and analyzing generic implications of various identified deficiencies in the SSWS.

This evaluation was prepared over a period of months using three phases of SSWS problems as a model in analyzing TU Electric's ability to accomplish and processes used to perform an analysis.⁷ The report is a major study of the breakdown of various TU Electric and contractor programs and processes designed to evaluate problems and events such as the corrosion of the service water system. His report also studies how the inability of contract personnel to adequately evaluate the initial problems was compounded and repeated over the years by other contractors and TU Electric personnel until the discovery of a hole in the service water system piping forced reevaluation of previous assessments. Finally, the report analyzes how TU Electric still failed in a post-incident evaluation to come to grips with the system failures that contributed to the pipe's being physically damaged and the potential impact of these failures on other plant systems and components.

⁶ See, for example, the comments of Mr. Doyle at the July 13, 1988, pre-hearing conference on this matter at pps 25,273 to 25,280.

⁷ CASE advised TU Electric by letter on December 4, 1989, that Mr. Doyle's draft report identified substantial programmatic deficiencies in TU's quality assurance program and other programs designed to address deficiencies. A copy of this letter was provided to the NRC staff under cover letter dated December 5, 1989. TU Electric and the NRC Staff were also made aware of Mr. Doyle's work at a November 17, 1989, public meeting on the Auxiliary Feedwater check valve failure.

II. PURPOSE

Mr. Doyle's report concludes, in essence, that the probable root cause of the multiple failures in the SSWS resulted from a fundamental inability of TU Electric personnel (as well as its contractors) to perform a thorough and accurate analysis of the incidents, events, system or component failures, and identified deficiencies in order to prevent the SSWS problems from compounding. (This inability or unwillingness to fully grasp the generic implications of events was repeated in the Spring of 1989 with the Auxiliary Feedwater check valve failure incident.)

After consideration of Mr. Doyle's evaluation, as well as input from its other consultants, CASE has reached the conclusion that TU Electric must proceduralize a formal process for conducting root cause analysis and evaluating generic implications of incidents, events, and deficiencies at the site as part of their station Operating Procedures. This program must include training and audit requirements. Finally, this program must be given the highest management priority and be demonstrated functional and effective prior to completion of construction for Unit II, pre-operational testing, and operation of Unit I.

CASE has already engaged in several discussions with TU Electric officials in that regard, and is pleased that TU Electric has apparently reached a similar conclusion to Mr. Doyle regarding the need for a proceduralized program to analyze root cause. This apparent recognition is buttressed by the October 30, 1989, issuance of TU Electric Procedure No. STA-515, Rev. 0 "Root Cause Analysis," and the lesson plan for training on this program that Mr. Doyle recently began to evaluate. TU Electric and CASE are currently engaged in discussions in an attempt to resolve the specific matters of disagreement in the fledgling program for performing root cause analysis. Hopefully, these discussions will lead to a final program procedure that CASE, and Mr. Doyle, believe will provide TU Electric the mechanism to avoid inadequate and misdirected root cause and generic implication evaluations.

As a result of TU Electric's efforts on this issue, CASE is not providing this report to you in support of any pending dispute, and is hopeful no dispute will be necessary. Nonetheless, CASE believes that the results of Mr. Doyle's work and the conclusions he has reached on the facts reviewed are critical to the NRC's evaluation of the safe operation of the Comanche Peak facility, the competence of TU Electric personnel to operate the plant, and the integrity of the decisionmaking and evaluation process so necessary to safe plant operations. We urge you to consider it carefully as you evaluate the readiness of TU Electric management to operate the plant, and the appropriateness of enforcement action in regards to service water system failures and the auxiliary feedwater check valve

incident.⁸

III. BASIS AND ISSUES FOR CONSIDERATION

CASE has submitted this report to the NRC for the purpose of its review and consideration under the rights of Paragraph B. 7 of the Joint Stipulation, and in furtherance of its various duties to inform the public of the results of its activities toward protecting public health and safety.

As the Staff is well aware, without the 1988 Settlement Agreement and Joint Stipulation, CASE would have pursued these issues in front of the Atomic Safety and Licensing Board as part of its proof that TU Electric could not prevail on the merits of Contention 5.⁹ Although it is difficult to speculate on the hearing process had no settlement been reached, it is safe to assume that the report would probably have been submitted in the form of a Motion for Summary Judgment or Preliminary Proposed Findings of Fact for the Board's consideration in reaching the ultimate determination on Contention 5 and the granting or denial of an operating license. In this regard the issues before the Board would be similar to the situation during the post-denial stage of the Byron proceedings. (In the matter of Commonwealth Edison Company (Byron Nuclear Power Station, Units 1 and 2), Docket Nos. 50-454/455, INITIAL DECISION, January 13, 1984.) In that case the Licensing Board denied Commonwealth Edison's application for a license, in part, because the Board could not conclude that the quality assurance implications raised by a discrete subcontractor failure and attendant quality assurance programmatic breakdown had been adequately resolved and

⁸ This report is particularly appropriate to be considered in connection with the violation identified in Inspection Report 50-445/89-23, 50-446/89-23, undated, and as yet unissued publically, but which CASE believes must be issued and resolved prior to licensing.

⁹ The text in Contention 5 was: "The Applicants' failure to adhere to the quality assurance/quality control provisions required by the construction permits for Comanche Peak, Units 1 and 2, and the requirements of Appendix B of 10 C.F.R. Part 50, and the construction practices employed, specifically in regard to concrete work, mortar blocks, steel, fracture toughness testing, expansion joints, placement of the reactor vessel for Unit 2, welding, inspection and testing, materials used, craft labor qualifications and working conditions (as they may affect QA/QC) and training and organization of QA/QC personnel, have raised substantial questions as to the adequacy of the construction of the facility. As a result, the Commission cannot make the findings required by 10 C.F.R. 50.57(a) necessary for issuance of an operating license for Comanche Peak."

corrected. Like the substantiated worker allegations on electrical issues at the base of the denial in Byron, Mr. Doyle's report substantiates a programmatic failure in SSWS, covering years, and resulting in hardware defects in a critical safety system.

In Byron the Board refused to allow the Staff to make the ultimate decision on the identified flaws. Their refusal to delegate decisionmaking authority on contested issues to the Staff does not apply here. The Staff is both a party to the Joint Stipulation and the decisionmaker in regards to readiness to load fuel and recommend to the Commission approval for an operating license. No licensing board will conduct further evidentiary hearings on discrete issues of management's judgment and actions by TU Electric. In that capacity CASE believes it is critical that the issues raised in this report are considered thoroughly by the Staff prior to any decision on fuel load and operation.

The report contains conclusions applicable to issues of both regulatory character and competence of TU Electric to manage and operate Comanche Peak. Some of these conclusions are very negative. Unfortunately, the conclusions are not ancient history, but seem to persist in the handling of events over the past several months. These incidents have eroded CASE's confidence in various managers at TU Electric to respond to events, identified deficiencies, and programmatic breakdowns as quality-minded managers prudently operating a nuclear plant. CASE has raised these matters directly to TU Electric through the Joint Stipulation and regular management conferences, and in some cases raised the matters directly to the NRC through letters or disputes.¹⁰

CASE recognizes that the NRC Staff must reach a determination on whether TU Electric has met the regulatory requirements of 10 CFR Part 50, as well as demonstrated the competence to manage an operating plant.

The Code of Federal Regulations requires that applicants for a license establish Quality Assurance compliance during operation, as well as during design and construction. Specifically the regulations mandate the existence of

¹⁰ See, November 23, 1989 letter from Billie Pirner Garde to William G. Counsil and Christopher Grimes Re: Documented Request for Action (re: Thermo-Lag/50.57 dispute between CASE and TU Electric) Docket Nos. 50-445, 50-446. See, also, CASE's December 6, 1989 Documented Request for Action concerning a quality assurance and engineering breakdown in scaling calculations effort over the past five years.

ii. Managerial and administrative controls to be used to assure safe operation. Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," sets forth the requirements for such controls for nuclear power plants.

The information on the controls to be used for a nuclear power plant shall include a discussion of how the applicable requirements of Appendix B will be satisfied. 10 CFR, Part 50.34 (11)(b)(6)(ii)

and further requires that,

(3) To satisfy the following requirements, the application shall provide sufficient information to demonstrate that the requirement has been met. This information is of the type customarily required to satisfy paragraph (a)(1) of this section or to address the applicant's technical qualifications and management structure and competence.

(i) Provide administrative procedures for evaluating operating, design and construction experience and for ensuring that applicable important industry experiences will be provided in a timely manner to those designing and constructing the plant. (I.C.5)

(ii) Ensure that the quality assurance (QA) list required by Criterion II, App. B, 10 CFR Part 50 includes all structures, systems, and components important to safety. (I.F.1)

(iii) Establish a quality assurance (QA) program based on consideration of: (A) Ensuring independence of the organization performing checking functions from the organization responsible for performing the functions; (B) performing quality assurance/quality control functioning at construction sites to the maximum feasible extent; (C) including QA personnel in the documented review of and concurrence in quality related procedures associated with design, construction and installation; (D) establishing criteria for determining QA programmatic requirements; (E) establishing qualification requirements for QA and QC personnel; (F) sizing the QA staff commensurate with its duties and responsibilities; (G) establishing procedures for maintenance of "as-built" documentation; and (H) providing a QA role in design and analysis activities. 10 CFR 50.34 xxvii (3)(i)-(iii)

It is CASE's position that demonstrated failures in

fundamental regulatory programs and processes, such as the quality assurance program and a failure at accomplishing thorough root cause analyses, are predictors of whether a utility can safely operate a plant. This view is supported by NRC case law which states that "Plainly, whether the plant was properly built bears on whether it can be operated safely..." ALAB-799, citing Union Electric Co. (Calloway Plant, Unit 1), ALAB-740, 18 NRC 343, 345 (1983).

In keeping with this approach, Mr. Doyle's report and evaluation goes beyond hardware and technical issues and evaluates processes.

The report's conclusions identify probable causes of certain events and deficiencies with the SSWS that can be characterized as "Character and Competence Issues." Although neither the Atomic Energy Act nor the Commission's case law provide a complete definition of the term, several licensing boards have addressed the issue and applied it to evaluating events, patterns, and management actions in the design, construction, and operation of nuclear power plants.¹¹ In this regard, CASE submits that competence, as a separate issue of fitness to operate a nuclear plant, has been defined to be the technical abilities of an applicant to meet its regulatory requirements and protect public health and safety.¹² This includes "the sufficiency of staffing and resources, the quality of management, and the adequacy of a utility's organization." Id.

The Commission has determined that remedial measures are appropriate to consider in evaluating the competence of an applicant for an operating license.¹³ Likewise, NRC case law has held that "character" which remains a subjective set of traits, cannot be evaluated without regard to evaluating remedial measures taken to correct identified weaknesses.¹⁴ The Appeals Board in the South Texas case agreed with the Licensing Board that in order to evaluate "character" the Board needed to scrutinize the applicant's "...record of compliance with NRC

¹¹ See, for example, In the Matter of Houston Lighting and Power Company, et. al. (South Texas Project, Units 1 and 2), Docket Nos. 50-498/50-499 OL, DECISION, Atomic Safety and Licensing Appeal board, February 6, 1985, ALAB-799, 19 NRC 659; In the Matter of Metropolitan Edison Co., (Three Mile Island Nuclear Station, Unit No. 1) ALAB-738, 18 NRC 177, 190 (1983); and ALAB-772, 19 NRC 1193, 1206 (1984).

¹² ALAB-799, at ____.

¹³ Id., at ____.

¹⁴ Id., at ____.

regulations, its response to non-compliances, and its candor in dealing with the Commission, the Board, the Staff and other parties." Id.

CASE submits that under the terms of the Joint Stipulation, the NRC Staff must perform the role of scrutinizing TU Electric's history of performance, compliance, and candor, and that their duty to do so in this case, without benefit of a licensing board, is even greater than usual. CASE recognizes that TU Electric has begun to undertake some remedial measures in response to quality assurance programmatic weaknesses identified by both the NRC and CASE.¹⁵ We expect that the NRC will evaluate those remedial measures, the adequacy of those efforts, the information regarding SSWS disclosures and AFW events, and the commitment made by top level TU Electric management to respond to identified weaknesses in programs and personnel. However, we believe that the hour is getting very late for instituting major programmatic reforms and that such efforts must be scrutinized by the Staff to insure that they are not simply "window dressing" to be taken down after licensing.¹⁶ This scrutiny may give rise to a consideration of imposing a licensing condition on TU Electric requiring continuation of certain self-initiated programs and efforts. Although CASE stops short of suggesting that action at this time, it is very close to requesting the same.

CONCLUSION

Since the beginning of its role under the Joint Stipulation, CASE often finds itself in the role of an independent ombudsman. It is CASE's belief that the observations and findings of its consultants and representatives provide TU Electric management factual information, analysis of facts, and insight into the power plant from a unique perspective. In most cases TU Electric responds to those observations with an open mind. Hopefully, they will respond to this report in a like manner. However, at this late date, CASE recognizes that ultimately the responsibility for determining the readiness of TU Electric to

¹⁵ As mentioned previously TU Electric has written a procedure for root cause analysis, and has undertaken some corrective measures in response to the thermo-lag incident and scaling calculation dispute.

¹⁶ Id., citing United Broadcasting Co. v. FCC, 565 F.2d 699 (D.C. Cir. 1977), cert. denied 434 U.S. 1046 (1978), affirming Application of United Television Co., 55 F.C.C. 2d 416 (1975) that upholds the denial of an FCC license because of a long history of persistent violations by the Applicant. The relevant finding was that the applicant's remedial measures were mere "window dressing" and that no reliance could be placed on its promise of future compliance.

operate the Comanche Peak plant in a manner consistent with protecting the public health and safety lies exclusively with the NRC, and that the Commissioners and the general public expect the Staff to carry out that responsibility conscientiously and cognizant of all available information. In that vein CASE supplies this report for your assistance in carrying out your regulatory responsibilities.

Respectfully submitted,

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