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# COMANCHE PEAK STEAM ELECTRIC STATION ALLEGED CLIMATE OF INTIMIDATION

**EG&G** Idaho, Inc.

IDAHO NATIONAL ENGINEERING LABORATORY

**DEPARTMENT OF ENERGY**

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# COMANCHE PEAK STEAM ELECTRIC STATION: ALLEGED CLIMATE OF INTIMIDATION

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# ABSTRACT

## COMANCHE PEAK STEAM ELECTRIC STATION: ALLEGED CLIMATE OF INTIMIDATION

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NRC contracted with EG&G Idaho, Inc., to investigate the work climate at the Comanche Peak Steam Electric Station (CPSES), and to develop an expert opinion as to whether or not a climate of intimidation was created among QA/QC personnel by CPSES Management such that the safety of the plant might be compromised.

EG&G Idaho assembled a team of individuals with broad experience in the nuclear industry and specific knowledge and skill in management and organization to conduct this study. An additional researcher with expertise in surveying organization climates and analyzing survey questionnaires was selected to perform an independent analysis of a set of relevant survey data.

The team established a working definition for a climate of intimidation and then assessed the reports, depositions, survey data, and other information available. Key findings were that the extent of alleged intimidation was limited, and that people did feel free to express their opinions. CPSES showed a strong concern about intimidating behavior, and generally followed with corrective action. Analysis of the 1983 Questionnaire Survey showed little or no evidence of intimidation as anything but a relatively rare, coincidental occurrance. Specific management problems were identified and judged significant; however, these factors did not constitute a climate of intimidation.

The study team concluded that a climate of intimidation did not exist at CPSES.

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## COMANCHE PEAK STEAM ELECTRIC STATION: ALLEGED CLIMATE OF INTIMIDATION

## 1. INTRODUCTION

This introductory section presents the overall purpose of this study and the team assembled to conduct it. The specific problem focus, definitions of key terms, and the procedures followed are also described.

### 1.1 Overall Task

The Nuclear Regulatory Commission (NRC) contracted with EG&G Idaho, Inc. to investigate and develop an expert opinion as to whether or not a climate of intimidation was created by management at the Comanche Peak Steam Electric Station (CPSES). Many individuals involved in the Quality Assurance/Quality Control (QA/QC) area put forth allegations that management created a climate of intimidation during construction of the plant, inhibiting Quality Control (QC) inspectors in the performance of their duties according to written standards and regulations, to the extent that the safety of the plant might be compromised.

In the context of issuing an operating license to this plant, the NRC has taken depositions from those individuals alleging irregularities and from the applicant utility. This was done in anticipation of a formal Atomic Safety Licensing Board (ASLB) hearing. These depositions as well as several NRC Office of Investigations reports, a Comanche Peak Special Review Team Report, internal reports and reviews conducted by the applicant utility (including surveys of QC inspectors), and other reports and data seen as potentially relevant to judging charges of management intimidation constitute this data reviewed by the Study Team. A comprehensive listing of these data is presented in Appendix A of this report.

The Study Team reviewed the available material in order to advise the NRC as to whether or not, in their expert and independent opinion, there appeared to be a climate of intimidation created by management among the QA/QC personnel at CPSES.

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## 1.2 Team Assembly

Mr. Bruce Kaplan, the study team leader, was in charge of overall coordination of the study. Mr. Kaplan has a masters degree in Organization Development and has been involved with issues of general management, as well as organizational climate and effectiveness, in his role as an internal consultant for EG&G Idaho for a period of five years.

Dr. William E. Stratton, an Associate Professor of Management at Idaho State University served as interim coordinator during a portion of the review process, and contributed to integrating the study into a final report.

Kaplan, in consultation with NRC personnel, determined that the study team should include someone with expertise in organization behavior and the functioning of large and complex organizations, and in the particular milieu of the nuclear power industry. It was recognized that, while one single individual might possess all these qualities to the extent desired, there might be some advantages to assembling an interdisciplinary team to perform the study. Such a team would have the advantage of including individuals with different but relevant backgrounds, and fostering analysis from a number of points of view. This approach was adopted.

The organization scientist selected for the project was Dr. Newton Margulies, Dean of the Graduate School of Management at the University of California at Irvine. He was especially well qualified for the study in terms of his academic training, past research, and consulting experience.

To obtain management experts with broad experience in the nuclear industry, Mr. Charles Rice of LRS Consultants, Inc. (LRS) of Idaho Falls, Idaho, was contacted. Mr. Rice, in turn, utilized the support of Mr. Carl Andognini of LRS. Each has had extensive experience and a long career in the nuclear power industry, and currently works as a consultant in that industry.

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As a part of their review, the study team chose to analyze responses from a 1983 survey regarding work climate at CPSES. The survey was conducted by the applicant utility among their QA/QC personnel. An additional outside expert was sought to render an independent analysis of these survey responses. Dr. David Bowers of the Institute for Social Research at the University of Michigan was selected to perform this analysis. He is a nationally recognized expert in surveying organizational climates and in analyzing survey questionnaires.

Extensive resumes of all team members are included in Appendix B.

### 1.3 Problem Focus

The basic issue with which this study was concerned was whether or not management created a climate of intimidation among QA/QC personnel at CPSES. In order to make such a judgement, a number of terms were defined and the charge to the study team elaborated.

### 1.3.1 Specific Problem Focus

The central question the study team attempted to answer was: Did management by its actions create a climate of intimidation for the QA/QC personnel at CPSES such that they performed their duties in a manner resulting in some likelihood of adverse impact on the safety and quality of the plant. The intent was to establish if a pattern of intimidation by management existed. Several clarifications are pertinent here.

1.3.1.1 Climate of Intimidation Versus Individual Intimidation. The intent was to establish if a pattern of intimidation existed. This is distinct from whether or not certain individuals were, in fact, intimidated at one time or another. The team was concerned with an overall climate of intimidation indicating a systemic problem.

1.3.1.2 Intimidation by Management Versus Other Sources. The concern was whether or not management actions, or possibly inaction,

created the climate of intimidation, if it existed. This is distinct from intimidation that inspectors may have felt from actions on the part of crafts personnel.

### 1.3.1.3 Climate of Intimidation Versus Management Style. A

distinction was also made between what is called a climate of intimidation and what might be described as an autocratic and rigid management style in the plant. Such a style does not necessarily indicate an intimidating climate with adverse consequences with respect to safety concerns.

### 1.3.1.4 Intimidating Climate Versus Actual Safety Problems. This

report deals only with the work climate in the plant which may have some potential to adversely affect the safety of the plant. It is beyond the scope of this study to attempt to evaluate whether or not safety problems exist, or to make any judgement about the resulting condition of the plant with respect to its safety.

### 1.3.2 Definition of Terms

In order to proceed, the team agreed upon working definitions for the terms "intimidation" and "climate of intimidation." A discussion of these definitions follows.

### 1.3.2.1 Definition of Intimidation. The term intimidation refers to

rendering someone timid, thereby inducing that individual to do something, or to refrain from doing something, because of fear or apprehension. Hence the process of intimidation involves three major components: (a) the incident, action, or statement which induces the effect, (b) the resulting feeling or emotion experienced by the recipient, and (c) the ensuing action on the part of the recipient who, because of fear, is forced into behavior that otherwise would be rejected, or is deterred from actions that would otherwise be taken.

In the context of this study, then, intimidation is an incident, action, or statement that causes an employee to act contrary to, or refrain from acting in compliance with written procedures.

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1.3.2.2 <u>Definition of Climate of Intimidation</u>. The existence of a climate of intimidation could be evidenced by the following symptoms:

- Widespread allegations of intimidation indicated by a large number of cases, the inclusion of areas other than QA/QC, or allegations occurring over an extended period of time would point toward a climate of intimidation. This would involve many different individuals alleging intimidation and would identify many different intimidators.

- A pervasive atmosphere of fear on the part of the allegers related to testifying or deposing, to answering questions that might be traceable to the individual, or to naming specific individuals as intimidators would be indicative of a climate of intimidation.

- Failure of top management to take prompt and effective action to investigate allegations of intimidation and/or failure to take prompt measures to deal with the behavior of individuals demonstrated to be intimidators would constitute possible evidence of a climate of intimidation.

- Failure of management to protect the job security of individuals who allege intimidation while employed at CPSES would be indicative of a climate of intimidation.

- A general concern on the part of employees that not complying with inappropriate demands of supervision may result in the use of negative sanctions against them would be indicative of a climate of intimidation.

All of these indicators do not have to be present for a climate of intimidation to exist. If several, or even a few, are present to a significant degree then such a climate may be present.

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## 1.4 Procedures Followed

On July 18-19, 1984, three members of the study team traveled to Glen Rose, Texas, to meet with NRC representatives to review the study assignment. Mr. T. Ippolito and Mr. S. Treby of the NRC outlined the scope of the task and the time schedule necessitated by the licensing process. Arrangements were made at this time for the team members to receive copies of depositions and other pertinent data as they became available. Team members agreed upon definitions for the terms intimidation and climate of intimidation, and then individually reviewed the available data as it was received to reach independent conclusions regarding the basic question assigned. Both the organization scientist and the industry experts subjected the data to criteria they deemed pertinent from their particular professional viewpoints. Another brief visit to the CPSES site was also made by some team members to familiarize themselves with the environment in which the work in question was taking place.

Section 2 of this report details the data that were available and reviewed. Generally, these data consisted of a large number of depositions taken from individuals representing intervenors and the applicant utility, several NRC Office of Investigations reports, two sets of survey data collected from QA/QC personnel by the applicant, various other reports, and internal memoranda, interoffice correspondence, and reports from the applicant utility.

The various types of data from different sources were analyzed, keeping in mind the definitions of intimidation and climate of intimidation previously discussed. The team goal was to determine if sufficient direct or indirect evidence existed to conclude whether or not a pattern of intimidation of QA/QC personnel by management at CPSES existed.

The individual findings of the team members were reviewed and discussed by the team and integrated into this final report. Certain data including perceptions of a representative cross-section of CPSES employees with regard to the specific issue of intimidation, the opportunity to personally interview pertinent individuals, exit interviews, and employee

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records were not available to the study team. As a result, there were limitations in the nature and extent of available data. However, even within these limitations, the team was confident in making a judgement.

The remainder of this report presents the data utilized, the analysis performed, and the conclusions reached by the team.

## 2. DATA SOURCES

A large volume of data was available for review by the study team. These data consisted primarily of written material. The study team did not interview individuals or talk with individual deponents, representatives of the intervenors or the applicant utility, or other individuals during their review process. The major types of data utilized are described below.

### 2.1 Depositions

Depositions taken over a period of several weeks in July and August 1984 were reviewed individually by several of the team members. More than 80 depositions from individual deponents were included in these reviews, with some deponents having multiple depositions. Deponents represented those making allegations against the applicant utility on the part of the intervenors and those testifying at the request of the applicant. In addition to these depositions from individuals, there were five depositions made by groups or panels and five transcriptions of telephone conferences reviewed. In total, over 10,000 pages of deposition testimony were reviewed and utilized by the team in its assessment to determine whether or not a climate of intimidation existed at CPSES.

### 2.2 Survey Data

On at least two occasions during construction of CPSES, the applicant utility took steps to gather survey data from QA/QC personnel. These data are relevant to this study and are significant because they represent the only instances where the opinion of most of the QA/QC personnel are available with regard to pertinent issues.

In 1979, in response to allegations of problems in the QA/QC area, utility management created a Management Review Board to confidentially interview site QA/QC personnel. Interviewers followed a structured questionnaire format with all respondents being asked the same questions

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and the interviewers noting the answers of respondents on the questionnaire. These data were available to the study team; both the industry experts and the organization scientist made independent analyses.

A second survey of QA/QC personnel was conducted by the utility in 1983. This survey consisted of a questionnaire with nineteen items concerning aspects of the work environment. The questions required a "mostly yes" or "mostly no" response. The twentieth question which was open-ended, required a written response on any aspect of the QC job which the respondent felt should be changed or improved. The responses to this survey were sent to an outside expert in survey methodology and questionnaire analysis for an opinion.

## 2.3 Reports and Correspondence

In addition to the depositions and survey data the Study Team reviewed several NRC Office of Investigations reports, a Comanche Peak Special Review Team report produced by the NRC, several internal reports and reviews prepared by the utility, and a number of items of internal memoranda and correspondence from the applicant utility.

A comprehensive listing of the data reviewed is included in this report as Appendix A.

# 3. ANALYSIS

## 3.1 Organization Climate—Conceptual Framework

Organization climate is essentially a perceptual phenomenon. A variety of events and occurrences in the organization are important in influencing how people perceive and feel about the organization. Elements such as task requirements, the nature of interfaces, relationships among co-workers, the quality of supervision, the amount and nature of communication, and the equity of the reward system are all important in influencing the perception of the total climate.

The information individuals have, and upon which they base their perceptions, is also influenced by the communicated experiences of other organization members. As a result, the individual's knowledge is derived from second- or even third- or fourth-hand reports of events, confounded by the various distortions that take place in the transmission of information. Climate, then, represents a perception of the environment within the organization that is derived from all these sources.

The notion of a climate of intimidation refers to a situation where organizational members perceive that pressure is being exerted to induce them to not comply with the written procedures required for their jobs.

## 3.2 Analysis of Climate

The determination of whether or not a climate of intimidation exists in a given situation is not simple due to perceptions involved in the process. From an organizational behavior point of view, a climate of intimidation has many intervening elements that influence interpretation. Several questions identified below demonstrate the complexity.

- What specifically is the unit of behavior that can be characterized as intimidating? What does the initiator say or do?

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- What triggering behaviors have precipitated that unit of intimidating behavior? That is, what conditions or situations initiate such behavior?

- To what extent is intimidation a product of the receiver's perception? It is possible that variations in perceptions and individual styles would lead one person to interpret the specific behavior quite differently from another.

- What is the outcome of intimidating behavior? If a person feels threatened, but continues to perform his or her function, harassment may exist. However, by definition, intimidation may not have occurred. In the event a climate of intimidation exists, a full range of responses from ignoring potentially intimidating actions to being intimidated can occur on the part of different employees.

Some understanding of how people interpret incidents should be explained. For example, Figure 1 demonstrates how behavior is likely to be interpreted differently by different people due to the unique perceptions of each individual. One kind of management behavior (Behavior 1), might or might not be interpreted as intimidating. The interpretation made is largely a product of the intensity of the management behavior and the perception of the individual. On the other hand, another management behavior (Behavior 2), may be more explicit in that the manager or supervisor uses threats, coercion, or negative sanctions as ways of inducing particular responses from employees. In this instance, it is much clearer that behavior of this sort is intimidating. The difficulty in making this determination should be noted. First, there is the general problem of perception (who said and heard what) and the difference of opinion concerning events and occurrences. Second, it is difficult to ascertain whether negative sanctions were appropriate in specific instances, or if there were illegitimate abuses of power.

The data available to make these assessments were limited. All relevant documentation was not available at the time of the study, the

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Perceptual
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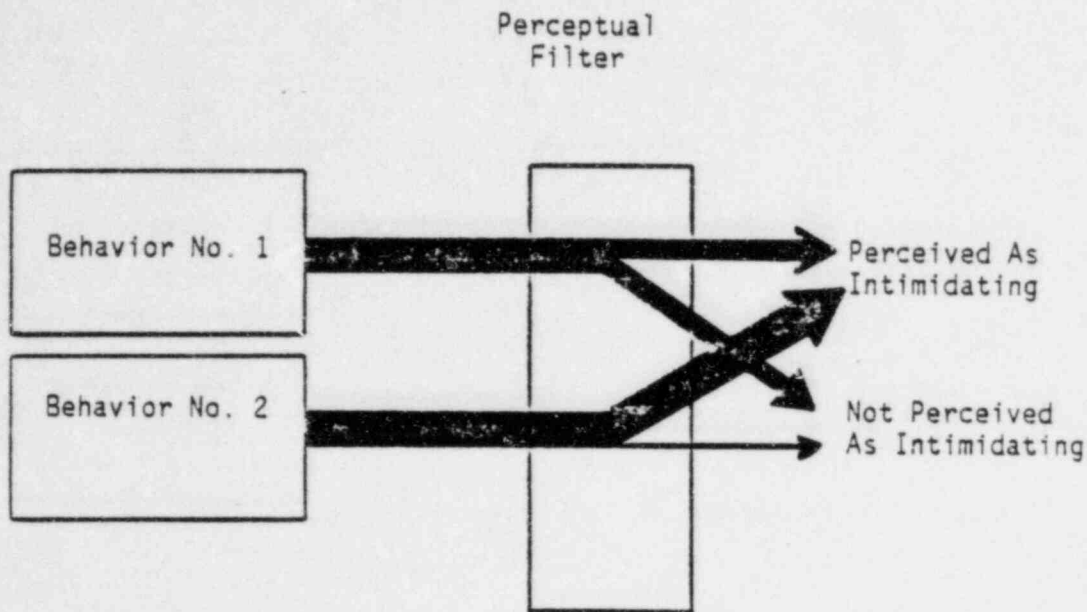


FIGURE 1

Interpretation of Behavior

Behavior No. 1:  This management behavior could be typed as aggressive,
autocratic, etc.  The perception of behavior as
intimidating or not depends on the intensity of the
behavior and the receiver's interpretation.

Behavior No. 2:  This behavior is more explicit.  The initiator uses
threats and negative sanctions to induce a particular
response.  The probability of interpreting this behavior
as intimidating is vastly increased.

The relative width of each arrow represents the
probability that the behavior will be interpreted in the
way indicated.

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depositions often pursued paths of inquiry unrelated to the question of intimidation, and information that might have been more relevant to the investigation could not be accumulated due to the legal processes underway. The set of data available is largely from allegers and management. A survey of an accurate sample of individuals randomly selected would result in more representative data which would permit more definitive conclusions to be drawn.

In general, the team's approach to analysis focused on two major aspects of the data. First, available information was reviewed to identify those reported actions which might be construed as intimidation. An attempt was made to understand the circumstances under which this perception could exist and to determine whether the instances were isolated or part of a more general management climate problem at CPSES.

Second, an attempt was made to quantify the analysis to determine, for example, how many depositions or other documents specifically dealt with intimidation. Counts were made of the number of allegers and the number of accused intimidators. As an additional consideration, the management response to complaints was considered to be very important, and specific actions taken in this regard were noted.

### 3.2.1  Analysis of Climate Using the Definition

An examination of the work climate was performed utilizing the various data sources described in Section 2 and the definition set forth in Section 1.3.2.2 which involved widespread allegations, a pervasive atmosphere of fear, management failure to take prompt and effective investigative action, and failure to protect allegers. Each section in the following discussion is preceded by the related element of this definition.

#### 3.2.1.1  Extent of Allegations of Intimidation.

> Widespread allegations of intimidation indicated by a
> large number of cases, the inclusion of areas other
> than QA/QC, or allegations occurring over an extended

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period of time would point toward a climate of intimidation. This would involve many different individuals alleging intimidation and would identify many different intimidators.

Several factors operating at the CPSES site can lead to conflict and possible perceptions of intimidation:

- The very nature of the relationship between craft personnel and QC inspectors creates an adversarial relationship to some extent. Crafts personnel are under pressure to complete work, and QC personnel may be seen as impediments; thus, a temptation to put pressure on the QC personnel may be created.

- Individuals higher in the QA/QC hierarchy have a better understanding of the relationship of the inspection function to the smooth flow of construction work and turnover of the system to start-up and operations. This can cause friction and confrontation between individual inspectors with a narrower organizational focus and their supervisors with a broader view of the organization.

- As any construction effort approaches completion and operation of the new facility begins, a demotivating factor develops for both craft and inspection personnel as jobs are completed and the prospect of unemployment arises. As a reaction, unconscious or intentional slowdown on the part of journeymen and inspectors often occurs, requiring increased pressure from supervision, and creating increased conflict between craftsmen and inspectors. This can result in accusations of harassment or intimidation.

As a result of these factors, it is expected that some instances of intimidation would occur on a large nuclear construction project, given the type of quality programs required by regulation and utilized at the site. Instances of alleged intimidation might be expected to increase as the project approaches completion.

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An attempt was made to tabulate the data sources used and the findings reached in order to address the problem of the extent to which a climate of intimidation was present at CPSES. The team calculated at one point that 65 depositions, 4 investigative reports, and 3 special reports, including 2 QC surveys, had been reviewed. Of the 65 depositions, it was concluded that only 47 provided relevant data; this means 18% of the depositions provided information that was not germane to this investigation.

Table 1 summarizes the analysis of this information along several dimensions. Data were provided by 114 individuals; 96 provided information judged relevant. Of the 96 sources, 23 were management and 73 were non-management personnel. In general, the information provided by management and supervisory people tended to be rebuttals and explanations regarding specific events and instances. Nine different organizational units were mentioned in the course of the discussion of allegations of intimidation.

It was not always possible to correlate individuals from deposition to deposition and thus obtain a precise count of accused intimidators or of claimed victims of intimidation. As can best be determined, the total number of allegers was 10 and the total number of those identified as intimidators was 12. Also, there was only a limited number of individuals, fewer than 10, who claimed in excess of one or two specific incidents of harassment or intimidation. Above the level of supervisor, there are only about five managerial individuals accused of intimidating or harassing actions.

In summary, there are a relatively small number of allegations of intimidation that appear to be reasonably well substantiated, a small number of allegers and a few management personnel that have been accused of intimidation. When considering the size of the work force, the total number of inspectors, the length of time the project has been underway, and the normal pressures to complete any job, the extent of QC inspector allegations of intimidation does not suggest that a climate of intimidation exists or existed at CPSES.

TABLE 1. SUMMARY OF DATA[a]

|  | Depositions | Other | Totals |
|---|---|---|---|
| Organizaticnal units identified | 7 | 2 | 9 |
| Data providers | 65 | 49 | 114 |
| Relevant providers | 47 | 49 | 96 |
| Management personnel | 18 | 5 | 23 |
| Non-management personnel | 29 | 44 | 73 |
| Number of allegers | 6 | 4 | 10 |
| Number of intimidators identified | 9 | 3 | 12 |

a. Does not include surveys ('79, '83).

3.2.1.2 Emotional State of Work Force.

> A pervasive atmosphere of fear on the part of the
> allegers related to testifying or deposing, to
> answering questions that might be traceable to the
> individual, or to naming specific individuals as
> intimidators would be indicative of a climate of
> intimidation.

A climate of intimidation on a work site would be reflected by a large
percentage of the work force being afraid to jeopardize their jobs or other
benefits because of personal association with charges of intimidation.  As
such, they would be afraid to depose on behalf of the intervenor, they
would wish to retain their anonymity, they would be extremely cautious in
their response to questions, and they might be reluctant to name specific
individuals as intimidators.

The NRC Report of Investigation dated August 24, 1983, appeared to
support a climate of fear on-site.  This was due to the deletion of many
portions of individual interview records and indications by a number of
those interviewed that confidentiality had been requested.  However, it is
noted that the identities and other details regarding even those not
requesting confidentiality must be masked to protect those making such a
request.  Also, in the interview of the direct supervisor of the individual
accused of intimidation, it became clear that the coating inspectors had
previously brought the same accusations of intimidation to him personally.
Consequently, it appears that issues of confidentiality or fear of
identification were not major factors in the environment.  This conclusion
is further supported by the investigation reports dated November 3, 1983,
and March 7, 1984, in which requests for confidentiality were extremely
limited (4 of 55 in the former, and 2 of 22 in the latter).

The 1983 QA/QC Questionnaire Survey results also support the
willingness of people to respond.  A very high percentage of the
questionnaires were returned (93%) and the response rate was quite high

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(96-99%) on all questions. Furthermore, 71% of the participants responded to the open-ended question with complaints of various kinds. A similar willingness to answer questions was exhibited in the 1979 Management Review Board Survey.

The study team, after reviewing the depositions the 1983 questionnaire survey responses, the 1979 inspector interviews, and the Office of Investigations reports concluded that the employees did not appear to be unduly afraid to answer questions asked or to name individuals they felt were intimidators or were attempting to intimidate them. The study team concluded that no pervasive atmosphere of fear has been demonstrated.

### 3.2.1.3 Management Response to Intimidation Allegations.

> Failure of top management to take prompt and effective action to investigate allegations of intimidation and/or failure to take prompt measures to deal with the behavior of individuals demonstrated to be intimidators would institute possible evidence of management complicity in a climate of intimidation.

Several aspects to management's response to intimidation allegations are pertinent to this assessment:

- Reaction to allegations in terms of conducting any investigation should be prompt

- Investigators should be independent

- Management dedication to quality and to reporting conditions adverse to quality should be highly visible

- Evidence of appropriate relationships between safety (i.e., quality) and schedule should exist

- Management action taken in response to proven intimidation should be prompt and appropriate.

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Each of these elements of management response to allegations of intimidation is examined below.

3.2.1.3.1  Promptness of Reaction to Allegations--Based on the various data reviewed, the team concluded that CPSES management has been relatively prompt in its response to allegations of intimidation. An example of this responsiveness was the establishment of an investigation committee, which produced the Keeley, Spangler, and Kahler report dated August 19, 1983. to investigate claimed intimidation of a QA auditor. In other instances, it was clear that QA supervision interacted in a timely manner with construction management in response to alleged intimidation of inspectors. Several terminations of craftspeople resulted from these actions.

The Texas Utilities Generating Company (TUGCO) initiated a Quality Assurance Management Review Board in 1979, which interviewed QC inspectors from a variety of areas in order that problems in the relationship between QC and supervisory personnel might be identified. The existing conflicts between production and QA/QC personnel were noted in the results of this effort. In addition, inspectors noted feelings about losing credibility, and difficulties in their relationship with QA supervisory personnel. Interviews were extensive, documented, and indicated a strong interest and concern on the part of management to deter any intimidating behavior and to try to resolve such issues.

3.2.1.3.2  Independence of Investigators--The independence of investigators is demonstrated through the use of personnel from TUGCO headquarters in Dallas to investigate allegations by QA auditors of QA management cover-up at the site. This particular investigation led to an accusation of intimidation. Both the cover-up and intimidation investigations were conducted expeditiously and resulted in a report dated August 19, 1983, which concluded that there was no evidence to support allegations of cover-up or intimidation.

An individual contract employee (not a TUGCO employee) was hired in November 1983 to serve as an independent ombudsman for employees to utilize

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for CPSES investigation concerns. The ombudsman also interviews all terminating employees and has been involved in several management and organizational concerns which involve employees.

Additional evidence of the concern of Texas Utilities for the independence of investigators includes the use of a "hot line" to the corporate security offices. As of June 25, 1984, corporate security had received 17 phone calls related to various allegations. Of these, six investigations were in progress, one had been partially completed, and the rest had been completed or referred to other officials as not being within the purview of the hot-line program and corporate security.

These steps taken by management support a claim of the independence of investigators.

3.2.1.3.3 Management Dedication to Quality--The August 19, 1983, report by Keeley, Spangler, and Kahler documented an investigation of intimidation and cover-up by QA management. It is important to note that this investigation was initiated by Mr. B. R. Clements, Vice President Nuclear at TUGCO. An investigation was performed to ensure that QA was performing properly according to the performance standards expected by the company. The significance of this report is not so much the outcome of the investigation, but the process. For example, safeguards were taken to ensure the accuracy of information obtained in interviews. The investigation reviewed several incidents and noted their conclusions in this document. The process represents a management attempt to investigate allegations, protect providers of information, and ensure accuracy and completeness of information obtained. It appears that the report is thorough and detailed, indicating the serious attempt on the part of the management to deal with the issues at hand.

In a follow-up memo dated September 9, 1983, to D. N. Chapman by Mr. Clements, it is stated that "intimidation... will not be tolerated." In this memo, follow-up questions and queries were identified and Mr. Chapman was charged with providing the additional information. Once again, this is an indication on the part of management of their seriousness

in pursuing complaints and allegations in some detail, to try to understand the basis of those complaints, and to provide a basis for taking action.

In other documents, including minutes of a September 12, 1983 meeting between Mr. Clements and QA personnel, the manage ent position identified above is reiterated.

3.2.1.3.4 Relationship Between Safety and Schedule--In a December 20, 1983 memo to all personnel, Michael Spence, President of TUGCO, explicitly notes quality and safety as the highest priority of the company. He also states that compromises in safety and quality will not and could not be tolerated by the comp ny and, indeed, he notes the consequences for any employee not reporting any uch conditions that affect safety and quality at CPSES.

There is also a corporate policy and attitude with respect to the relationship between building a top-quality, safe plant and the monetary impact of delay that was expounded by Mr. L. F. Fikar in his deposition of July 11, 1984. Examples were given of cost and schedule tradeoffs that had been made to assure building a safe, quality plant. It was stated explicitly that the company would not jeopardize its 3.9 billion dollar investment for a delay of a day or two, a week, or even a month or two.

3.2.1.3.5 Prompt and Appropriate Management Action--In cases involving claimed or demonstrated intimidation of QC inspectors by craft journeymen, prompt action, including terminations, appears to have been taken on several occasions.

One case in which a craft person was accused of and admitted having grabbed the coat of an inspector and yanked her, should have been followed with immediate termination. However, the inspector is alleged to have persuaded management not to terminate the offender.

The NRC Office of Investigations report dated August 24, 1983, dealt with an alleged incident by a QC supervisor. The supervisor's manager had

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become aware of the incident only shortly before the report date and did take action subsequently to move that supervisor out of his position because of his supervisory ineffectiveness.

According to the ombudsman, in all cases he investigated and made recommendations on, CPSES management initiated his recommended corrective action.

There is less evidence of such generally prompt action with regard to intimidators who were either craft or QC supervisors. In several cases, it appears that QA/QC supervisors were belatedly counseled and subsequently removed from their positions.

Examination, then, of management's response to intimidation allegations indicates that management tended to respond promptly to the specific allegations and provide independent investigators. They repeatedly stated their dedication to quality and generally followed with prompt corrective action to confirmed intimidation or harassment incidents. Where alleged intimidators were QA/QC supervision or craft supervision, corrective action was not always prompt.

3.2.1.4 Protection of Allegers. Another element in the definition of climate of intimidation deals with the protection of those who made allegations of intimidation:

> Failure of management to protect the job security of individuals who allege intimidation while employed at CPSES would be indicative of a climate of intimidation.

Insufficient evidence was available on this point to reach a substantive conclusion. In several depositions and the records of a number of interviews, it was clear that the company urged individuals to take concerns to management or the NRC. A number of individuals, including both

deponents and those interviewed in April 1984, expressed the feeling that one's job was more secure after becoming an alleger because of "whistle blowing" regulations. On the other hand there were deponents who believed they had been terminated because they had alleged intimidation, harassment or other potential quality problems.

3.2.1.5 General Fear of Misuse of Negative Sanctions. This final element in the definition of climate of intimidation deals with a general climate of misusing negative sanctions to force compliance with supervisory demands:

> A general concern on the part of employees that not complying with inappropriate demands of supervision may result in the use of negative sanctions against them would be indicative of a climate of intimidation.

The best available evidence regarding this element of the climate is found in the survey data collected in 1979 and 1983.

The 1983 QA/QC Questionnaire Survey provided very little evidence of such behavior on the part of supervisors. The complaints expressed were generally of a moderate tone and focused on "normal" work issues and problems. Only three of 139 respondents made comments that would fall into the intimidation category.

The 1979 Management Review Board Survey provided data from an earlier time period that were subjected to a similar analysis. There were a number of complaints about supervisors and management (issues dealing with communication, the craft/QC interface, pay inequities, etc.), but very few, if any, related to negative sanctions being applied inappropriately.

Analysis of the available data leads to the conclusion that there is no evidence of any widespread climate of fear on the part of employees that supervisors misuse negative sanctions to force inappropriate behavior.

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In summary, this analysis of the various elements that could be present and indicative of a climate of intimidation leads to the following conclusions:

- The extent of allegations with regard to the organizational units involved and the number of allegers and intimidators identified is very small.

- The employees at CPSES did not appear to be unduly afraid to answer questions or to name individuals they felt were intimidators or were attempting to intimidate them.

- The response of management to intimidation allegations appears to have been prompt, and investigators utilized were relatively independent. Management repeatedly stated its dedication to quality and generally followed confirmed intimidation or harassment incidents with prompt corrective action.

- Insufficient evidence was available to determine the extent to which allegers were protected. The company has urged individuals to take concerns to management or the NRC, and some individuals expressed the feeling that allegers became more secure because of "whistle blowing" regulations. Others, however, felt they had been terminated for making allegations.

- No evidence of any widespread climate of general fear on the part of employees that supervisors misuse negative sanctions to force inappropriate behavior was found.

### 3.2.2  1979 Management Review Board Survey

In 1979, a TUGCO quality assurance management decision was made to conduct interviews of the QA/QC department personnel utilizing a questionnaire of 40 questions (five numbered questions with a total of 40 parts) in an attempt to determine what types of difficulties confronted the individuals in the department. The decision to conduct these

interviews was made following complaints about pay that had been received by management and an NRC report indicating they had been receiving allegations about low morale in the QA/QC organization.

The interviews were carefully structured to provide anonymity through the following:

- An interview team that was outside the direct chain of command on site was used

- All those interviewed were advised that the information provided would be confidential and their names would not be provided to anyone on site

- An alpha numeric designator was used to identify each set of notes with nobody on site receiving a copy of the cross-reference key

- Concerns manifested were to be presented to site management in a way that would not compromise any individual's confidentiality.

The review team was told to obtain all the information that was on the minds of the QC personnel without trying to analyze the information obtained.

As part of the study team's task, copies of the 1979 interview protocols were obtained. Two different approaches to analysis were undertaken and are described below.

3.2.2.1 1979 Survey--Content Analysis. The purpose of the survey appeared to be exploratory in nature inquiring into the feelings and perceptions of QC personnel about their jobs, quality of supervision, and the support of QC management. It was a general investigation into problems, experiences, or observations at the CPSES site.

However, since the survey was not designed to address the specific concerns of this study, a judgement had to be made as to which questions were relevant for analysis. This process involved sorting those questions in the survey which seemed germane to the study interests from those that were not. An initial inspection of the survey led to the selection of five questions that seemed relevant. A careful inspection of 10% of the questionnaires was conducted to ascertain whether or not the questions excluded would also exclude relevant information. This inspection led to the conclusion that no relevant data would be excluded by eliminating the other questions.

A content analysis was performed on the responses of 121 individuals to the five selected questions.

Analysis of Question 1d(2)--This question asked people to identify what made them uncomfortable about their jobs. All responses were listed without modification of the wording. Frequencies were tabulated on responses that were worded essentially the same. Items were then grouped to retain the basic theme of the responses but without destroying items which were intended to communicate a different message. For example, items relating to quality of management were grouped in this heading regardless of the specific examples or skill discussed by the respondents.

Eleven different categories emerged in response to this question. Three were related to the technical job performed by inspectors, and accounted for a total of 20 responses on the survey. Of these, five responses indicated a concern over procedural violations. Most of the items identified relate to the skill and sophistication of management and supervision (inconsistency, lack of feedback, poor communication, interface management, and supervisory credibility). While technical concerns were covered on the survey, these were interpreted as rather straightforward technical issues and did not explicitly reflect on the climate.

There is little question that the concerns surfaced by this question reflect management issues of communication, interface management, and supervisory credibility among subordinates in the leadership at CPSES.

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However, in an intimidating climate where a pervasive attitude of "cutting corners" exists, it would be expected that more discomfort with procedural violations would be indicated by the responses than was the case.

Analysis of Questions 2a and 2b--These questions ask specifically about perceived supervisory support and the quality of supervision. On the support question, the responses from 99 individuals who responded were split almost half and half. There were 48 positive responses and 51 negative ones, indicating that about half of the respondents felt that supervisory support of QC inspectors was not what it could or should be. The qualitative inputs indicated that there was a relationship problem between supervisors and inspectors. Inspectors felt that quality and judgment of supervisors was low, their ability to motivate and deal with personality problems was poor, and that they did not manage the interface with craft very effectively. Note the similarity of these responses to those from the previous question analyzed.

Analysis of Questions 5a and 5b--These questions asked generally what problems existed in the QC organization, and what solutions were suggested. It was expected that responses to all these questions would overlap to some extent, and in fact, the responses correlated quite well.

Again, all items were listed, synthesized, and categorized to simplify the data. Eleven categories emerged with the predominant problems being in the areas of pay inequities, communications, interface with craft, and technical training of inspectors. Once again the quality of management and supervision was a concern as reflected in high-frequency categories related to management capability. Low-frequency items were "fear factor", "procedural difficulties," and "organizational structure."

It would be expected in a general question such as Question 5 that the opportunity to identify incidents and events reflecting an intimidating climate would occur. There was, in fact, very little information of this sort present, however. Two or three incidents were mentioned briefly, but there was clearly no prevasive reporting of such an attitude or intent.

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Overall, the data from this survey were not unlike the profile of other large, bureaucratic organizations. That is, the problems seem similar, and are most likely the result of management practices which could be improved. While the responses to the questions did indicate a slightly more negative set of responses with regard to quality of management and supervision, the issues of communications and interface management are not uncommon elsewhere. The profile that emerged did not represent high employee morale, or an exceptionally high positive attitude at CPSES, but it also did not indicate a pervasive intimidating climate.

3.2.2.2 1979 Survey Analysis--Response Categorization. To complete this approach to analysis, copies of the completed questionnaires were obtained and analyzed utilizing the methodology outlined as follows:

- The forty questions were reviewed in detail, and five questions pertaining to a climate of intimidation were identified.

- Three classifications for categorizing responses were created:

     1.  Intimidating--The response clearly states or permits the inference that the respondent was subjected to intimidating actions.

     2.  Potentially intimidating--The response indicates the individual felt pressured or suffered some apprehension with no clear evidence that actual intimidating incidents took place.

     3.  Not intimidating--The response, or lack thereof, permits the inference that the respondent was not subjected to intimidating actions.

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- The responses to each of the five questions from each of the 121 total interviews were reviewed and categorized according to the classifications outlined above.

- All questionnaires that had one or more answers to the five questions with either intimidating or potentially intimidating responses were evaluated for degree of possible intimidating climate.

Upon completion of this process, it was found that nine individual respondents indicated some perception of intimidation by falling into one of the first two categories. Of this number, five ere in category two, and four respondents, amounting to 3% of those surveyed, were in category one. It appears then, that data available from five years ago (1979) when analyzed, do not reflect a pervasive climate of intimidation.

In summary, two approaches were utilized to analyze the 1979 Management Review Board Survey data. Both approaches, undertaken independently from one another, reached the same conclusion. A content analysis of the responses to selected relevant questions identified some issues of possible concern to management, but yielded no indication of any pervasive climate of intimidation. A second approach, involving the overall categorization of each respondent based on answers to relevant questions reached the same conclusion. Only a very small percentage of employees surveyed described or complained about intimidating incident..

Although the ask of the Study Team did not include evaluating whether or not actual intimidation occurred in specific instances at CPSES, the team concluded that some of the alleged cases of intimidation probably were cases where people perceived some pressures but were not really intimidated into professional misconduct. This problem of perceived pressure is related to the management style prevalent at CPSES and will be discussed in detail in Section 3.3.

### 3.2.3 1983 QA/QC Questionnaire Survey

The information provided to the Study Team included the questionnaire responses to an employee survey administered to approximately 150 QA/QC inspectors in 1983. The questionnaires returned as usable numbered 139 and were grouped into five subgroups of QC inspectors. The use of survey data is a very common method for understanding and identifying employee attitudes and opinions with regard to their jobs, supervision, work environment, and perceived attitudes and philosophy of management of their organization.

In this instance, the survey was constructed specifically for use in the QA/QC organization and was also specifically constructed around items focusing on the following categories:

- Supervision: A number of items asked for opinion and perceptions with regard to the technical capabilities of immediate supervisors, the perceived confidence in supervisory decision making, the amount of specific direction provided by supervisors, and the relative effectiveness of supervisory communication

- Attitudes of Top Management: A second group of items asked for opinions about the attitudes of top management in the QA/QC organization and the receptiveness of those managerial personnel in dealing with problems identified in the QC area

- Relationship between QC and Craft: Other items asked for opinions about the relationship of QC inspectors to craft personnel. These items focused on the degree of receptivity of craft personnel to input, suggestions, and guidelines provided by QC inspectors

- Attitudes of Craft Personnel: Questionnaire items asked for perceived attitudes of QC personnel with regard to the quality of work and the degree of skill of craft personnel.

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A total of 19 forced-choice questions requiring a checked response were included. There was also one open-ended question (Question 20) requiring a written response on any aspect of the QC job which the respondent thought could or should be changed in the service of improvement.

This survey was an important source of data for it provided wide coverage of QA/QC personnel and elicited responses which could be identified as their attitudes and opinions on various aspects of their overall job environment.

The following paragraphs briefly describe and summarize the analysis of the 1983 questionnaire survey. The analysis proceeded on two levels:

Level 1: Simple Analysis of Responses--Direct Measures

The questionnaire permits specific identification of the attitudes and concerns of people in the QC organization. For example, the questions focus directly on feelings and perceptions of various work-related factors (supervision, environment, etc.). In addition, responses to the open-ended question can be categorized and tabulated in terms of the concerns evidenced.

Level 2: Complex Analysis of Responses--Indirect Measures

An analysis of item responses was performed to infer whether or not QA/QC personnel were reacting to a climate of intimidation at CPSES at the time of the survey. Analyses of the pattern of favorable and unfavorable responses to certain questions, and noting the degree to which more threatening questions are left unanswered or are answered more favorably or cautiously, are examples of this more complex analysis. Responses to the open-ended question were also examined for what they might reveal about the organization climate.

The focus and purpose of this study requires this second level of analysis to be performed to provide an additional perspective on the question under study. While the substance of individuals' attitudes and

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concerns, indicated by their direct responses, was of interest, it was nevertheless, secondary to our interest. The more complex analysis of the pattern of responses was designed to allow inferences to be made regarding the climate within the organization.

The detailed Level 2 analysis of survey item responses, while not conclusive, did allow the study team to make some important inferences about the issue of intimidation among the QC inspectors. This approach looked at the relative distortion of responses, to examine deviations from "normal," and to provide some indication of the implications of any patterns with regard to the problem focus in this report.

In this sense then, the analysis of the survey data examined and used as criteria for judgement the following dimensions:

Level 1 Analysis:

- The analysis explored whether or not the responses were highly negative and reflected a highly negative opinion and perception of the QC organization

- An analysis of written comments from Question 20 (What aspect of your job would you like to see changed the most and how?) was performed to see whether or not such written comments indeed reflected an attitude and feeling of intimidation.

Level 2 Analysis:

- Examination was made to ascertain whether or not there was an overwhelming or unrealistic positive response to items on the survey questionnaire. Another way of viewing this is to see whether or not there is an "abnormal" absence of negative responses, which might occur in an intimidating environment.

- Examination was made to see whether or not there seemed to be a distorted positive response to more "threatening items" on the

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questionnaire compared to less threatening items. That is, an examination was performed to determine whether or not respondents overcompensated positively on items they felt would be examined. "Threatening items" were defined as those questions which, if a critical response were given and the respondent identified, could potentially lead to punitive action taken against the respondent.

A detailed report of this analysis is presented in Appendix C of this report. It was performed by Dr. David Bowers of the University of Michigan, a nationally known expert in Survey Research and Survey Analysis. The following summary analysis is derived from his report.

Response rates on all items in the questionnaire was judged to be relatively high. That is, on almost all items, the response rate varied from 96 to 99%, indicating that people were clearly not reluctant or reticent to respond to any of the items. Further, one might infer that there is relatively little doubt about or concern with the protection and confidentiality of respondents.

Dr. Bowers categorized items based on the relative degree of threat perceived by the respondent (see definition above). He categorized each item as high threat, intermediate threat, or low threat.

On all items, regardless of relative degree of perceived threat, the response rate was high (approximately 96%). Therefore, one might infer that people were able and willing to respond to perceived high-threat items, much as they would to perceived intermediate- or low-threat items. A more detailed description and analysis of these item by item categories is presented in Appendix C.

The analysis indicated that, in general, across all five subgroups, negative (or unfavorable) responses were common in about the same proportion. This means that negative attitudes could not be identified as predominant in any one sub-group, but indeed were scattered among most respondents. Moreover, the unfavorable profile was deemed to be "normal."

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With regard to the open-ended question, responses were categorized by Dr. Bowers in five areas:

1. Complaints about working environment including wages, hours, benefits, working conditions, etc. (25.9% of respondents).

2. Complaints about organization bureaucracy including red tape, minor annoyances, interpersonal relations problems, etc. (41.7% of respondents).

3. More serious complaints about work procedure and safety (1.4% of respondents).

4. Suggestions of intimidation (2.2% of respondents).

5. No response (respondents left this question blank) (28.8% of respondents).

Dr. Bowers concluded that in a content analysis of these responses, one might discern a relatively moderate tone, primarily focused on "normal" work issues, problems, and complaints. Indeed, only three of 139 respondents made comments which fall into the intimidation category (Category 4).

The overall conclusion of Dr. Bowers' analysis is that people felt free to respond and did express their opinion on issues. Additionally they were not reluctant to present a negative attitude when such an attitude was felt.

Two important aspects of this survey item analysis support this conclusion. First, the response to items in the "most-threatening" category was not appreciably different from responses on the intermediate- and low-threatening categorie... That is, negative responses were broadly scattered across these categories and, moreover, were broadly scattered across participants in the survey. Second, in the write-in question, there is no documented pattern in responses to indicate concern with

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intimidation. Three quarters (71%) of the participants in the survey did respond to this question, yet only three responses suggested anything aki.. to intimidation or an atmosphere of intimidation.

Dr. Bowers' conclusion was arrived at independently and without benefit of other sources of data. His interpretation of his analysis is as follows: "The findings ... disconfirm the existence of intimidation as a major factor in the survey results. The overall pattern is one of favorability, with normal and considered variation by question or issue. Insofar as the questionnaire survey results reflect real conditions, there is little or no evidence of intimidation as anything but a relatively rare, coincidental occurrence."

## 3.2.4 Historical Climate

Much of the data, with the exception of the Management Review Board report and a few depositions, are related to incidents occurring in the last two or three years. Therefore, it is not clear that a definitive evaluation of the climate that existed at CPSES prior to 1979 can be made. However, it is possible to infer what the climate might have been through several indirect means.

- Continuity of management. A number of the management personnel presently associated with CPSES have been with the project for many years. It is unusual for managers to change their style of management after they have reached a reasonably high level in any organization, and it is unlikely that their style would change in the middle of a specific project. Thus, if the climate created by the present management does not appear to be intimidating, then it is reasonable to conclude that the climate before 1979 involving many of the same managers was probably not intimidating either.

- Extrapolation. The 1979 survey elicited responses in a number of specific areas that would tend to lead the respondents to think in longer terms than simply that day's problems. (e.g.,

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questions on CPSES organization, advance notification of
activities requiring QC support, the training program, and
on-the-job-training adequacy, etc.) Consequently, although the
then current pay problems received much attention, it is felt
that prior instances of intimidation would have remained active
in the minds of people perceiving that they had been subjected to
such incidents. It is also highly probable that in a climate of
intimidation there would have been a number of specific incidents
noted by respondents to the questionnaires. Consequently, it can
be concluded that there was no evidence to support a climate of
intimidation before 1979 at CPSES.

- <u>Consistency of Surveys</u>. The two surveys taken in 1979 and 1983
  were the only sources of information from a broad cross-section
  of QC employees. Both surveys were utilized to elicit concerns
  from QA/QC personnel and they yielded generally consistent
  interpretations. Some specific incidents of alleged intimidation
  were indicated in each case, but neither survey evidenced
  widespread allegations or a pervasive atmosphere of fear.

Two different approaches to analyzing the 1979 data resulted in
comparable findings. A content analysis produced five responses indicating
concern over procedural violations, and two or three incidents of possible
intimidating behavior. A second approach found only four respondents who
described situations where they were clearly subjected to intimidating
actions.

The 1983 survey data resulted in comparable conclusions. Only 2.2% of
the respondents mentioned suggestions of intimidation, and it was concluded
that there was "little or no evidence of intimidation as anything but a
relatively rare, coincidental occurrence."

These conclusions, based on a broad sample of data from QA/QC
personnel taken four years apart, indicate that at neither time was there
evidence of any widespread problem of intimidation, and the small number of

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instances mentioned at each time does not appear to be growing. All these arguments, then, lead to the conclusion that at no time is it probable that a climate of intimidation existed at CPSES.

## 3.3 Management Style

### 3.3.1 The Concept of Management Style

As noted earlier, one factor that must be considered when discussing work climate is management style.

Management style can be cha___ ___ zed as the "personality" of the organization. It is critical, both in the way employees feel about the organization and its operating philosophy, and in the specific procedures used to manage various issues and dilemmas common to the organization and its tasks. The construction industry environment is more blue collar, manual, physical, and assertive relative to other organizations. The result is an emergent management style that appears to be aggressive, forceful, confronting, and insensitive. It is possible that some employees might interpret this behavior as intimidating and might even describe the organizational climate as intimidating, and indeed for some, it probably is.

Research indicates that in a more complicated technical environment (that is, one in which functions are non-repetitive, where various disciplines and technologies are required to interface, and where the environment is relatively unstable), a more participative and interpersonally-oriented management style seems more effective and appropriate.

In the performance of relatively stable, routine, and repetitive organizational functions, a certain degree of "Autocratic/Bureaucratic" behavioral style seems appropriate. Moreover, such a management style is often associated with the most efficient and effective organizations of that type. To some organizational members, however, this management style may be perceived as intimidating.

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### 3.3.2 Management Style at CPSES

The study team attempted to utilize the information available and compare impressions to develop a characterization of the management style at CPSES.. Inspecting the available data which included the sources described in Section 2, as well as various organizational charts, it is possible to extract a reasonable picture of how this organization is managed. Described below are these stylistic characteristics under the headings of Management and Organizational Structure, Management Philosophy, General Atmosphere, Decision Making, and Communication.

Management and Organization Structure: The structure of this organization is hierarchical, including many levels. There are approximately seven to eight levels from the top to the first line supervision at TUGCO. The organization operates according to a definitive chain of command with very specific job roles and job descriptions. The organization functions, both in the accomplishment of its tasks and in the way it is managed, according to specific procedures and policies that are carefully outlined and defined. Management difficulty is compounded due to the involvement of many contractors and subcontractors.

Management Philosophy: Given the extent and complexity of the job environment, the primary management role is viewed as one of control. The management style is basically conservative with an emphasis on error prevention. The primary vehicle for influencing behavior and getting the job done is the exercise of authority and, in this sense, management has little tolerance for ambiguity or for the questioning of supervisory demands.

Organizational Atmosphere: There is little doubt that the atmosphere at CPSES can be characterized as task-centered. Getting the job done is the most important priority and consumes much of the attention of supervisory personnel. The atmosphere is tense and stressful due to the complexity of schedules and interfaces which tend to be potentially conflictful.

<u>Decision-Making</u>: Decision-making is characterized as involving many people at the top of the organization and very few at the bottom. Decisions are primarily routine following very careful procedural and policy guidelines. As a result, there is very little deviation from preset procedures.

<u>Communication</u>: The management style with regard to communications is primarily downward. There is very little opportunity for interaction and, given some of the above descriptions, there is little tolerance for deviating from information communicated downward.

While this description may not be the most ideal and certainly seems to require some modification given new perspectives on managing in complex environments and the new demands and values of the work force, there are few data available here which would demonstrate a pervasive climate of intimidation at CPSES. This authority-oriented style often creates resistances and special motivational problems, but in and of itself, would not lead to an intimidating climate or to specific instances of intimidation.

3.3.2.1 <u>Managerial Problem-Solving Style</u>. Management response to problem situations is another aspect of management style. Where there is a discrepancy between the existing management style and the requirements of the technology, task, and mission of the organization, there seems to be one of two general responses in most organizations:

1.  Fix the System: In some instances, the management of an organization may elect to modify and change its own management style and organizational processes such that their methods conform more appropriately with the organization's task and mission.

2.  Fix the Problem: For the most part, management in large organizations is rigid and static. Thus, problems are not addressed as a set of systemic and cultural issues, but are

treated in a more narrow perspective, a more short-term orientation in which the approach is to solve the immediate symptom.

Management personnel at CPSES responded in a timely manner to repeated complaints and difficulties, and specifically to allegations of intimidation. Examination of cases discussed in Section 3.2.1, Analysis of Climate Using the Definition, showed the timeliness of management responses, its use of independent investigators, and its explicit dedication to quality and safety of the plant. Other cases found in the data showed management's generally timely response to identified concerns of salary inequities, low morale, threats, facility inadequacies, and promotional difficulties.

In most of these instances, however, management took the approach of fixing the immediate problems at hand rather than fixing the system that caused the problems. They consider each complaint, or each set of allegations as a single and self-contained issue to be addressed and resolved. Indeed, they do not appear to see the relationships between recurring patterns of complaints and the inherent difficulties which reside in the management and organizational system within which they function.

Criticism could be directed at the rather narrow set of management responses utilized to resolve inherent conflicts. If management were to deal with the general pattern as well as isolated symptoms in order to improve the relationship between superiors and subordinates, and to build a good strong working relationship among QA, QC, and the crafts, then appearances or perceptions of intimidation might be significantly reduced.

## 4. SUMMARY AND CONCLUSIONS

A detailed review of the 1979 QC Interview Survey, the 1983 QA/QC Questionnaire survey, NRC inspection reports, depositions, and miscellaneous data outlined in Section 2 was completed. An analysis, insofar as limitations of the data permitted, of the work climate, management style, and historical climate was completed.

It is recognized that the depositional data was limited, reflecting information from complainants, managers, and related individuals. The reports reviewed generally focused on investigations of specific allegations. The questionnaire information, while more generally applicable to this investigation, was still not focused enough to draw unequivocal conclusions. A summary of fact findings are:

1. The extent of allegations with regard to the organizational units involved and the number of allegers and intimidators identified is very small.

2. The employees at CPSES did not appear to be unduly afraid to answer questions or to name individuals they felt were intimidators or were attempting to intimidate them.

3. The response of management to intimidation allegations appears to have been prompt, and investigators utilized were relatively independent. Management repeatedly stated its dedication to quality and generally followed confirmed intimidation or harassment incidents with prompt corrective action.

4. Insufficient evidence was available to determine the extent to which allegers were protected. The company has urged individuals to take concerns to management or the NRC, and some individuals expressed the feeling that allegers became more secure because of "whistle blowing" regulations. Others, however, felt they had been terminated for making allegations.

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5. No evidence of any widespread climate of general fear on the part of employees that supervisors misuse negative sanctions to force inappropriate behavior was found.

6. Analysis of the 1983 Questionnaire Survey disconfirmed the existence of intimidation as a major factor in the survey results. There was little or no evidence of intimidation as anything but a relatively rare, coincidental occurrence.

7. Findings from the 1979 Management Review Board Survey identified specific problems in communication at all levels of the organization, with the management of interfaces between QC and Crafts, in the technical training of inspectors, and with the quality of supervision. While judged significant, these factors did not constitute a climate of intimidation.

In the judgment of the study team a general climate of intimidation did not and does not exist at Comanche Peak Steam Electric Station.

APPENDIX A
COMPREHENSIVE LIST OF DATA REVIEWED

# APPENDIX A
## COMPREHENSIVE LIST OF DATA REVIEWED

A large volume of data was available for review by the study team. The comprehensive list below is divided in separate categories to include the deposition and transcripts, survey data, NRC reports, and internal reports, office correspondence and memoranda of the applicant utility that were reviewed by the study team.

## DEPOSITIONS AND TRANSCRIPTS

| Date | Witness | Transcript Pages |
|------|---------|------------------|
| 7/09/84 | G. Keeley | 36,187-216 |
| | R. Spangler | 36,128-187 |
| | R. Kahler | 36,000-127 |
| | J. Green | 35,000-078 |
| | F. Coleman | 35,079-125 |
| | M. Krisher | 37,000-138 |
| | J. Johnson | 39,000-062 |
| | A. Vega | 36,500-659 |
| | D. Chapman | 35,500-730 |
| | J. Patton | 37,561-712 |
| | L. Wilkerson | 37,500-560 |
| | J. Callicutt | 38,000-110 |
| | K. Liford | 38,111-187 |
| | --* | 35,535A-535F |
| | T Conference | 38,500-542 |
| 7/10/84 | B. Clements | 40,000-192 |
| | --* | 43,500-568 |
| | --* | 43,000-077 |
| | --* | 42,500-546 |
| | G. Purdy | 41,000-272 |
| | T. Locke | 41,503-606 |
| | R. Tolson | 40,500-669 |
| | B. Snellgrove | 44,000-136 |
| | W. Mansfield | 44,500-566 |
| | G. Krishnan | 42,000-016 |

| Date | Witness | Transcript Pages |
|------|---------|------------------|
| 7/11/84 | M. Spence | 48,000-086 |
| | P. Brittain | 48,501-527 |
| | L. Fikar | 46,001-144 |
| | B. Grier | 45,500-614 |
| | J. George | 47,500-541 |
| | T. Brandt | 45,000-238 |
| | M. Wells | 46,500-551 |
| | R. Yockey | 47,000-024 |
| 7/12/84 | D. Frankum | 49,000-130 |
| | B. Murray | 50,500-568 |
| | S. Miles | 50,600-628 |
| | L. Smith | 49,500-514 |
| | R. Messerly | 50,000-087 |
| 7/13/84 | J. Krolak | 52,500-064 |
| | D. Stiner | 52,000-250 |
| | R. Tolson | 51,000-138 |
| | H. Stiner | 51,500-721 |
| 7/16/84 | M. Welch | 52,000-264 |
| 7/17/84 | R. Taylor | 53,500-553 |
| | W. Whitehead | 55,000-164 |
| | Cummins | 54,000-075 |
| | "B"* | 54,500-559 |
| | "B" Discovery* | 1-201 |
| 7/18/84 | Hawkins | 56,000-119 |
| | "F"* | 55,500-733 |
| | W. Clements | 60,000-084 |
| | Tedder | |
| | Hutchison | |
| | Baker | |
| | Hall | 60,500-590 |
| | T Conference | |
| | re "F"* | 38,543-566 |
| | Calton | |
| | (Tape) | 1-76 |
| 7/19/84 | J. Hallford | 70,000-059 |
| | R. Yockey | 61,000-020 |
| | C. Manning | 61,500-516 |
| | F-Staff | |
| | Discovery* | |
| | F-Apps' | |
| | Discovery* | 2 vols |

| Date | Witness | Transcript Pages |
|------|---------|------------------|
| 7/20/84 | "F"* | 339-546 |
|  | "L"* | 56,500-509 |
|  | R. Dempsey | 70,500-514 |
|  | J. McMain | 71,000-019 |
| 7/23/84 | T Conference | 38,567-654 |
| 7/24/84 | D. Woodyard | 56,500-605 |
| 7/25/84 | J. Blixit | 57,000-706 |
|  | R. Siever | 58,000-139 |
|  | D. Culton | 58,500-591 |
|  | J. Stanford | 57,500-587 |
| 7/28/84 | L. Barnes | 59,000-246 |
| 7/30/84 | Panel 1 |  |
|  | C. Biggs |  |
|  | G. Fanning |  |
|  | R. Whitman |  |
|  | J. Uehlein | 71,500-659 |
|  | Panel 2 |  |
|  | M. Rhodes |  |
|  | W. Sims |  |
|  | M. Todd |  |
|  | S. Burns | 73,000-160 |
| 7/31/84 | T Conference* | 36,655-689 |
|  | --* | 54,559-718 |
|  | Panel 3 |  |
|  | Anderson |  |
|  | Spencer |  |
|  | Boren | 72,500-681 |
|  | D. Anderson | 73,000-042 |
|  | J. Pitts | 73,500-553 |
| 8/01/84 | H. Gunn | 75,000-008 |
|  | S. Hoggard | 74,000-016 |
|  | J. Scarbrough |  |
|  | & D. Ethridge | 74,500-521 |
|  | S. Neumeyer | 59,500-623 |

| Date | Witness | Transcript Pages |
|------|---------|------------------|
| 8/02/84 | T Conference | 38,690-726 |
| | D. Chapman | 76,500-631 |
| | --* | 76,000-211 |
| | S. Neumeyer | 59,694-825 |
| | | |
| 8/03/84 | | |
| | --* | 76,212-258 |
| | --* | 77,500-557 |
| | --* | 77,300-387 |
| | J. Keller | 78,000-026 |
| | --* | 75,500-643 |
| | | |
| (Extra) | K. Luken | 78,500-539 |

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* In camera.

Hearing Transcript in the Matter of William A. Dunham vs. Brown & Root, Inc., U. S. Dept. of Labor, Case No. 84-ERA-1, February 13-14, 1984, pp. 1-253, 301-534.

## SURVEY DATA

1979 MANAGEMENT REVIEW BOARD SURVEY--Interview protocols from 121 residents who were asked a total of forty questions each (5 multi-part questions with a total of 40 different items).

1983 QA/QC QUESTIONNAIRE SURVEY--Questionnaire responses from 139 QA/QC personnel in five groups, referred to as "White Paper Report" at CPSES.

## NRC REPORTS

Comanche Peak Plan for the Completion of Outstanding Regulatory Actions, NRC, July 1, 1984.

Comanche Peak Steam Electric Station:  Intimidation of Coatings QC Personnel, Report of Investigation 4-83-001, NRC Office of Investigations, August 24, 1983.

Comanche Peak Steam Electric Station:  Alleged Intimidation of QC Personnel, Report of Investigation 4-83-013, NRC Office of Investigations, November 3, 1983.

Comanche Peak Steam Electric Station:  Alleged Intimidation of QC Personnel, Report of Investigation 4-84-006, NRC Office of Investigations, March 7, 1984.

Comanche Peak Special Review Team Report, NRC report on a limited, unannounced review, April 1984.

Document 38EX 3841; Protocols from 26 interviews conducted in conjunction with the Special Review Team Report.

Partial Initial Decision in the matter of Duke Power Company, et. al, (Catawba Nuclear Station, Units 1 and 2), NRC, ASLB, June 22, 1984, (ASLBP No. 81-463-06 OL)

<u>Quality Assurance Program Requirements for Nuclear Power Plants</u>, ANSI
N45.2-1971, American Society of Mechanical Engineers, July 14, 1975.

## INTERNAL REPORTS, OFFICE CORRESPONDENCE AND MEMORANDA

| To | From | Subject | Date |
|---|---|---|---|
| A. Vega | J. M. Roberts | Records Verification Concerns QAI-0014 | 05-30-84 |
| Chris Boyd | Boyce H. Grier | Employee Concerns with Harassment | 05-04-84 |
| D. N. Chapman | R. G. Tolson | Margaret Lucke | 11-03-84 |
| Personnel File | C. T. Brandt | Magaret Lucke | 10-31-83 |
| NCR C-83-02965 | Margaret Lucke | | 11-01-83 |
| Inspection Report PC108073 | Margaret Lucke | | 10-28-83 |
| Jr. Haley | Mike Barr | Message | 10-28-83 |
| Personnel File | R. G. Tolson | QC Inspector Mark Ried Badge No. D-798 | 11-03-83 |
| File | G. R. Pardy | 35-1195, CPSES Counseling of M. Reed | 11-11-83 |
| File | R. G. Tolson | Mr. David Dial | 02-09-84 |
| Report of Interview | David L. Andrews | Ronald James Jones | 03-15-84 |
| Report of Interview | David L. Andrews | Cecil Manning | 04-12-84 |
| Report of Interview | David L. Andrews | Stan Vore | 04-18-84 |
| Report of Interview | David L. Andrews | J. B. Leutwyler | 04-18-84 |
| Quality Control Recertification | C. Vega | Ronald Jones | 03-16-84 |
| Report of Interview | David L. Andrews | Gordon Purdy | 04-11-84 |
| Report of Interview | David L. Andrews | Bill Ford | 04-18-84 |
| Report of Interview | David L. Andrews | Ray Vurpillat | 04-11-84 |
| Report of Interview | David L. Andrews | Al Smith | 04-11-84 |
| Thomas Miller | David L. Andrews | (Registered letter) | 04-10-84 |

| To | From | Subject | Date |
|---|---|---|---|
| Personnel Department | David L. Andrews | Ronald J. Jones | 01-27-83 |
| Quality Control Recertification | C. Vega | Ronald Jones | 03-23-84 |
| J. B. Leutwyler | W. H. Ford | Message | 10-11-83 |
| File | Les Taggart | Notification of absenteeism Ron Jones | 04-10-84 |
| File | Les Taggart | Notification of absenteeism Ron Jones | 03-23-84 |
| File | Les Taggart | Notification of absenteeism Ron Jones | 03-07-84 |
| Les Taggart | K. J. Jones | Message | 11-14-84 |
| Ron Jones | M. T. Bronstad | Message | 02-02-84 |
| File | Paulette | Notification of absenteeism Ron Jones | 02-13-84 |
| File | Cindy Jones | Notification of Absenteeism | 02-02-84 |
| File | Paulette | Notification of absenteeism Ron Jones | 01-31-84 |
| File | Paulette | Notification of absenteeism | 2-01-84 |
| Les Taggart | Ron Jones | Message | 01-11-84 |
| | | Ron Jones (calendar) | 02-01-83 |
| Les Taggart | Ron Jones | Message | 01-19-84 |
| File | Paulette | Notification of absenteeism Ron Jones | 01-18-84 |

| To | From | Subject | Date |
|---|---|---|---|
| File | Les Taggart | Notification of absenteeism Ron Jones | 01-12-84 |
| Les Taggart | Ron Jones | Message | 01-13-84 |
| Paulette Wilson | W. H. Ford | Message | 01-09-84 |
| | W. H. Ford | Ron Jones Absentees | 04-08-83 |
| Bill Ford | Ron J. Jones | Message | 12-29-83 |
| Les Taggart | W. H. Ford | Message | 12-09-83 |
| (hand written letter) | W. H. Ford | Ron Jone | 12-09-83 |
| Time Office | Brenda Papenthien | Message/Ron Jones | 08-08-83 |
| Time Office | Brenda Papenthien | Message/Ron Jones | 08-05-83 |
| Stan Vore | Ron J. Jones | Message | 07-25-83 |
| *Paulette Wilson | Stan Vore | Message | 08-03-83 |
| Stan Vore & J. B. Leutwyler | Ron Jones | Message | 06-27-83 |
| Stan Vore & J. B. Leutwyler | Ron Jones | Message | 05-09-83 |
| To Whom It May Concern | Cathy Erwin | Ron Jones GED Scores | 4-12-83 |
| | Jane P. Jones | Ron Jones GED Scores | 03-21-83 |
| Arlington Heights High School | Paula Gilleland | Requesting Verification of Education/Ron Jones | 02-24-83 |
| Training Coordinator | Ronald J. Jones | Education & Work Time Verification | |
| | | Ron Jones Resume' | 03-21-83 |
| Bell Helicopter Inc. | Paula Gilleland | Requesting Verification of Previous Employment | 02-01-83 |
| Western Executive Search | Paula Gilleland | R. J. Jones | 02-01-83 |

| To | From | Subject | Date |
|---|---|---|---|
| Distribution | G. R. Purdy | Wage & Salary Adjustments 35-1195, CPSES | 01-03-83 |
| (For Information Only) | Les Taggart | Instructor Qualification Ron Jones | 05-07-84 |
| (For Information Only) | Les Taggart | Quality Control Recertification Ron Jones | 05-07-84 |
| (For Information Only) | J. B. Leutwyler | Inspection Certification Ron Jones | 07-01-83 |
| (For Information Only) | J. B. Leutwyler | Inspection Certification Ron Jones | 07-18-83 |
| (For Information Only) | J. B. Leutwyler | Inspection Certification Ron Jones | 10-14-83 |
| | off phone recorder | anonymous call #017 | 05-23-84 |
| | off phone recorder | anonymous call #016 | 05-23-84 |
| A. Vega | Boyce H. Grier | Interview with Gary L. Scruggs | 06-20-84 |
| Distribution | Joy Terry | Request for Assistance in resolving Quality Assurance allegations | 06-18-84 |
| Distribution | Boyce H. Grier | Request for Assistance in resolving Quality Assurance allegations | 06-20-84 |
| A. Vega | Boyce H. Grier | Interview with Gary Scruggs | 06-20-84 |
| File | David L. Andrews | Quality Concern #001 02 03 | 11-21-83 |
| File | David L. Andrews | Quality Concern #001 02 03 | 11-16-83 |

| To | From | Subject | Date |
| --- | --- | --- | --- |
| Harry Williams File | Susan Spences | Memo | |
| D. N. Chapman | Harry O. Williams | Letter | 03-17-82 |
| D. N. Chapman | B. R. Clements | Allegations by W. A. Dunham | 09-19-83 |
| Gordon Purdy | Curtis L. Poer | William A. Dunham | 10-18-83 |
| D. N. Chapman | Antonio Vega | Investigation into allegations made by W. A. Dunham | 10-26-83 |
| Curtis L. Poer | Fredrick J. Killion | Letter | 10-27-83 |
| John Collins | R. J. Gary | Investigations into File No. 10066 | 12-13-83 |
| DLA | A. Vega | Message | 02-27-84 |
| Stephen L. Hoech | Curtis L. Poer | Billie Orr V. Brown & Root Inc. | 04/06/84 |
| DNC | A. Vega | Troy Amos Allegations | 03-02-84 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0001 Supplement #1 | 12-20-83 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0001 | 12-20-83 |
| | | Telephone call with Troy Amos | 01-06-84 |
| Distribution | Jerry C. Walker | Resolution of QAI-0001 | 03-09-84 |
| Chapman | Jerry C. Walker | Memo | 03-05-84 |
| A. Vega | Boyce H. Grier | Investigation of Allegations QAI #0001 | 02-22-84 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0001 Supplement #2 | |

| To | From | Subject | Date |
|---|---|---|---|
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0001 Supplement #1 | 12-20-83 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0001 | 12-20-83 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0017 | 06-13-84 06-13-84 |
| B. R. Clements Dave Chapman | David L. Andrews | Report of Investigation of Allegations by Chris Laughary QA File #0004 | 04-23-84 |
| Dave Chapman | David L. Andrews | Investigation of Allegations of Retaliation by Thomas Miller File #008 | 04-10-84 |
|  | Glenn Morgenstern | Handwritten Note |  |
|  | David L Andrews | File #008 | 01-25-84 |
| File | D. L. Andrews | Memo | 01-09-84 |
|  | Linda Acker | Phone Message | 02-10-84 |
|  | Wm. A. Dunham | Handwritten letter | 09-20-83 |
| J. M. Roberts | A. Vega | Record Verification Concerns | 05-16-84 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0014 | 05-16-84 |
| J. T. Merritt | A. Vega | Report on Allegation Regarding Coverup of Defective Wiring | 05/21/89 05-21-84 |

| To | From | Subject | Date |
|----|------|---------|------|
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0013 | 04-30-84 |
| | | Interview with Varlon Cummings | 04-30-84 |
| A. Vega | Boyce H. Grier | Allegation of Harassment QAI-0012 | 06-19-84 |
| | | Interview with John Winckel | 05-01-84 |
| J. D. Hicks | A. Vega | Allegation of Harassment | 05-16-84 |
| J. T. Merritt | A. Vega | Allegation of Harassment | 05-10-84 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0012 | 05-01-84 |
| | | Interview with Rick Henricks | 04-24-84 |
| Distribution | A. Vega | Request for Assistance in Resolving Quality Assurance Allegations QAI #0011 | 04-23-84 |
| Purdy | | Handwritten Investigation | 08-23-83 |
| Distribution | D. N. Chapman | Request for Assistance in Resolving Quality Assurance Allegations QAI #0006 | 04-11-84 |
| File of Teresa Whittlesey | C. H. Welch | QA/QC Interview | 04-10-84 |
| Distribution | D. N. Chapman | Request for Assistance in Resolving Quality Assurance Allegations QAI #0008 | 04-17-84 |

| To | From | Subject | Date |
|---|---|---|---|
| Distribution | D. N. Chapman | Request for Assistan in Resolving Quality Assurance Allegations QAI #0009 | 04-12-84 |
| Darrell G. Eisenhut | Billy R Clement | Allegations Transmitted by letter of 04-24-84 File #10125 | 06-01-84 |
| Darrell G. Eisenhut | Billy R. Clement | Allegations Transmitted by letter of 04-24-84 File # 10125 | 05-25-84 |
| File | Jerry C. Walker | QAI-0010 | 05-10-84 |
| Distribution | D. N. Chapman | Request for Assistance in Resolving Quality Assurance Allegations QAI #0005 | 04-10-84 |
| File of Gary Pugger | C. H. Welch | QA/QC Interview | 04-10-84 |
| | | Handwritten report of protective coating inspectors | 10-15-83 |
| Bob Rice | Harry H. Glasspiegel | William A Dunham Complaint | 10-04-83 |

Report on Allegations of Coverup and Intimidation by TUGCO, Dallas Quality Assurance, G. S. Keeley, R. G. Spangler, August 15, 1983.

APPENDIX B
RESUMES

## RESUME

### Bruce L. Kaplan

Mr. Kaplan is an Organization Development Specialist for EG&G, Idaho. His work involves consulting, counseling, coaching and training. He deals with issues of management and organization effectiveness in areas which include organization design and transition management, human resources and management development, interpersonal and intergroup conflict, team building, survey feedback, and business research. In his five years with EG&G Idaho, whose mission is providing research and development services for the government, Kaplan has consulted to scientific, technical, administrative and service organizations on such issues as problem solving and decision making, team-building, work climate assessment and improvement, productivity and quality of working life.

Kaplan holds a Master's Degree in Organization Development from Pepperdine University, where he studied the relationship between organizational climate and task accomplishment. His courses included Consultation skills, Organizational Systems Diagnosis and Action Strategies, including Management Development and Human Resources Planning. His prior education included graduate studies at Case-Western Reserve University in Organizational Behavior, and a Bachelor of Arts in Chemistry from the University of Cincinnati. His previous work experience was in adult and secondary education, where he held teaching, consulting, and administrative positions.

# RESUME

## William E. Stratton, Ph.D.

Dr. Stratton is an Associate Professor of Management in the College of Business at Idaho State University. In this capacity, he has studied and lectured about organization behavior and issues of organization development and effectiveness for the past 10 years.

Dr. Stratton received his Ph.D. degree in organization behavior from Case Western Reserve University in 1974. His prior education consisted of a BS degree in mechanical engineering and a MS degree in Industrial Administration in 1963 and 1965, respectively, from Carnegie-Mellon University. He is affiliated with a number of professional organizations including membership in the Academy of Management and the American Sociological Association.

Since joining the faculty at Idaho State University, Dr. Stratton has been involved as a consultant with numerous organizations including hospitals, food processing companies, public agencies, small businesses, a power company, and the prime contractor at the Idaho National Engineering Laboratory. Issues dealt with in these involvements have included management training and development, organization structuring, organizational climate, team building and effectiveness, and productivity improvement.

Dr. Stratton has been active in research in various areas related to the field of management which has resulted in frequent presentations at professional conferences, and in numerous publications.

# RESUME

## Newton Margulies, Ph.D.

Dr. Margulies is Dean and Professor of Management in the Graduate School of Management at the University of California at Irvine. He previously served as a professor there from 1972 until 1984. Prior to moving to Irvine, he was on the faculty of the Division or Organization Sciences at Case Institute of Technology, and in the Department of Management at the University of Miami.

Dr. Margulies received his Ph.D. degree in Behavioral Science from the University of California at Los Angeles (UCLA) in 1965. Prior to that he earned a B.S. degree in engineering from Brooklyn Polytechnic Institute, and received a M.S. degree in Industrial Management from the Massachusetts Institute of Technology.

In his professional life Dr. Margulies has had the opportunity to consult in the area of organizational development and team building with a variety of organizations including TRW Systems Group, the California Department of Water Resources, Northrup Corporation, the National Emergency Medical System, and others.

Dr. Margulies has written and lectured extensively in the field of organizational behavior. In addition to many articles published in professional journals, he is the co-author of the following books:

Organizational Development: Values, Process, and Technology (1972)
Organizational Change: Techniques and Applications (1973)
Conceptual Foundations of Organizational Development (1978)
Organizational Development for Health Care Organizations (1982)
Human System Development (forthcoming in 1985)

RESUME

## Charles M. Rice

Mr. Charles M. Rice, President of LRS Consultants, Inc., has had thirty-three years of nuclear experience, initially in technical areas of shielding, criticality, radiation damage, and reactor design. Since 1957, he has worked in project engineering, program management, and then general management where he had the following specific responsibilities:

1. President of LRS Consultants, Inc. since its founding in 1981. This company and Mr. Rice provide consulting services to a number of nuclear utilities, state agencies, industrial firms and federal contractors in areas of reactor safety, quality assurance, radioactive waste management, radiation protection, energy alternatives, and both program and general management.

2. Principal founder in 1972, President for six years and then Chairman of the Board until early 1981 of Energy Incorporated, a consulting firm specializing in safety analysis, quality assurance and nuclear plant startup.

3. Served for three and one half years as President and General Manager of Idaho Nuclear Corporation and Aerojet Nuclear Company with responsibility for management of the National Reactor Testing Station (now the Idaho National Engineering Laboratory), the USAEC's principal site for water reactor safety research and test reactor operation.

4. Program Manager for the AEC/NASA NERVA nuclear rocket development program. Also served as Project Manager for the first successful nuclear rocket engine NRX/EST and the flight prototype XE-1.

5. Program Manager for the Army Gas Cooled Reactor System Program including design and fabrication of the ML-1, (the first complete system prototype), the Gas Cooled Reactor Experiment, the closed cycle gas turbine power plant and all related research and development.

6. Reactor Engineering Department Manager responsible for development and installation of several university training reactors, consulting contract support to the AEC for central station power plants, maritime applications of nuclear power, metallurgical research and food irradiation applications. Patented a Variable Moderator Controlled Boiling Water Reactor.

7. Head of the Atomic Power Engineering Group for an architect engineering firm responsible for the design of the first boiling water nuclear power plant.

8. For four years served as a Physicist with the Oak Ridge Operations Office of the U.S. Atomic Energy Commission.

AB Physics
MS Physics
Oak Ridge School of Reactor Technology
Fellow and Charter Member, American Nuclear Society

RESUME

## G. Carl Andognini

Mr. Andognini is a registered professional engineer with 25 years of experience in the nuclear utility field. His most recent position was Vice President of Arizona Public Service Company with responsibilities for electric operations. He had responsibility for operations of all of the Company's generating facilities, including the staffing, training, establishment of management control systems, and startup of the Palo Verde Nuclear Generating Station, the transmission system and substations, including load and generation scheduling and control.

From 1975 to 1980, Mr. Andognini was Manager of Nuclear Operations for Boston Edison Company, with responsibility for plant operation and licensing, nuclear fuel procurement and management, and technical support for Pilgrim Unit I, plus operational design review of Pilgrim Unit II.

From 1958 to 1975, Andognini was a member of the Yankee Atomic Electric Company organization, whose duties included positions from Reactor Engineer at Yankee Rowe (Licensed Reactor Operator by the Nuclear Regulatory Commission), startup responsibility at Connecticut Yankee, startup and operational support for Vermont Yankee and Maine Yankee, to his last position of Assistant to the Vice President.

Andognini was a member of the utility group that, immediately after the Three Mile Island incident, developed the organizational concepts that became known as the Institute of Nuclear Power Operations (INPO), and served on the first Board of Directors for INPO. He was a member and later Chairman of the American Nuclear Society ANS-3, the subcommittee responsible for the development of ANSI Standards pertaining to staffing, training, organizational support, and security for nuclear power plants.

In addition, he served as a member of the American Society of Mechanical Engineers (ASME) Performance Test Development Group.

A member of the American Society of Mechanical Engineers, American Nuclear Society and the Edison Electric Institute's Nuclear Power Executive Advisory Committee.

## RESUME

### David G. Bowers, Ph.D.

Dr. Bowers is currently Vice-Chairman and President of Rensis Likert Associates and also Vice-Chairman and Resident Agent of The Foundation for Research on Human Behavior. From 1958 to 1966 he was associated with the University of Michigan Survey Research Center as assistant study director and study director. From 1966 to 1980 he was associated with the Center for Research on Utilization of Scientific Knowledge, also at the University of Michigan, as program associate, program director, and Acting Director.

Dr. Bowers received his Ph.D. degree in Industrial Psychology from the University of Michigan in 1962. He had previously earned a B.S. degree in Business Administration in 1957 and a M.A. degree in psychology in 1958 from Kent State University.

In his professional career Dr. Bowers has many years of experience in designing and administering interview and questionnaire surveys. His work has resulted in more than three dozen articles in professional journals and sixty major research reports.

While at the University of Michigan, Dr. Bowers has been involved in teaching courses in Personnel Psychology, Organization Theory, and the Theory of Organizational Change and Development.

He is a fellow in the American Psychological Association and a member of the Inter-University Seminar on the Armed Forces and Society.

APPENDIX C

1983 QA/QC QUESTIONNAIRE SURVEY ANALYSIS BY DAVID G. BOWERS

Report to
EG&G Idaho, Inc.

by

David G. Bowers, Ph.D.
Research Scientist

August 2, 1984

# INTRODUCTION

This report contains an analysis of the responses of 139 persons to a questionnaire entitled White Paper Report. The focus of the analysis was whether there is evidence, in either the substance or the response pattern of responses, of the respondents having been intimidated.

At the outset, some remarks about the issue of intimidation may be appropriate. The term refers to rendering someone timid, thereby inducing them to do something or to deter them from doing something, because of fear or apprehension. As such, it has two principal components: (a) the act or words which product the effect, and (b) the feeling or emotion that is induced in the recipient.

The survey results analyzed in this report can contain no direct reading upon possible acts of intimidation. They also can contain no direct reading upon the feeling or emotion of the respondents. What they can contain is evidence that the responses were distorted, in ways congruent with intimidation having been felt. It is this hypothesis that the present analysis considered.

The possible patterns for which the data were examined were the following:

- A pattern of "false positiveness," that is, an overwhelmingly positive response pattern in combination with one or more of the following:

    - An almost total absence of negative opinion

    - A high non-response rate

    - More positive responses to more threatening items

    - Skipping of items, especially more threatening items

- Uniform, intra-respondent positiveness

• A pattern of prevalent negative opinion

• A clustering of negative opinion within a significant minority of persons

• Written comments suggesting intimidation

• An almost complete absence of written comments, suggesting fear of identification by test of handwriting.

## ANALYSIS AND RESULTS

The 139 questionnaires, clustered into five subgroups, were collectively examined to test for the existence of these patterns. The following paragraphs describe what was done and the results:

• The 19 closed-end items were examined for response rate, to determine whether non-response rates would suggest intimidation on certain questions. There was no such effect. For all items but one, response rates ran between 96 and 99%. On that one item (Q. 5) the response rate was 89%. (See Table 1)

• Threat was defined as a situation in which, if a critical response were given and known, it could conceivably lead to punitive, negative, or disadvantaging action being taken against the respondent.

• Next, threat was judged in terms of whether, in my opinion, they were high, medium, or low potentially personally threatening in their content. The categories were:

TABLE 1. RESPONSE RATES TO CLOSED-END ITEMS

| Question | Number Responding | Percent (of 139) |
|---|---|---|
| 1 | 135 | 97 |
| 2 | 133 | 99 |
| 3 | 137 | 98 |
| 4 | 134 | 96 |
| 5 | 124 | 89 |
| 6 | 137 | 98 |
| 7 | 135 | 97 |
| 8 | 134 | 96 |
| 9 | 136 | 98 |
| 10 | 135 | 97 |
| 11 | 137 | 98 |
| 12 | 134 | 96 |
| 13 | 136 | 98 |
| 14 | 136 | 98 |
| 15 | 137 | 98 |
| 16 | 136 | 98 |
| 17 | 137 | 98 |
| 18 | 133 | 96 |
| 19 | 134 | 96 |

| High Threat (Items) | Medium Threat (Items) | Low Threat (Items) |
|---|---|---|
| 2 | 1 | 3 |
| 4 | 13 | 5 |
| 9 | 16 | 6 |
| 10 | 18 | 7 |
| 11 | 19 | 8 |
| 12 | | 15 |
| 14 | | 17 |

● It was noticed that the high threat items were all worded in the negative; that is, a response of "Mostly No" would be considered favorable. The low threat items, on the other hand, were all worded in the positive; a response of "Mostly Yes" would be considered favorable. The medium threat items were of mixed wording, two in the positive, one in the negative. any acquiescence response tendency would therefore tend to bias in favor of the two opposite ends of the threat dimension, that is, a tendency on the one hand to agree with the negatively worded high threat items, and with the positively worded low threat items. The results were:

Percent Favorable (i.e., "Mostly No") to negatively     79.5
worded high threat items

Percent Favorable to (mixed) medium threat items     66.7

Percent Favorable (i.e., "Mostly Yes") to positively     83.3
worded low threat items

In fact, therefore, despite any acquiescence response set, an overwhelming majority or respondents tended to disagree with the negatively worded high threat items. Any acquiescence response

set that is present probably causes the observed percentage to understate the true percentage disagreeing with these items.

- An informal check indicated no systematic referent differences among items in the high, medium, and low threat categories. Items in all three categories referred to management, supervision, craft, policies, and the like.

- There was also no concentration of non-responses in any of the three threat categories:

| Category | Mean Response Percent |
|----------|----------------------|
| High threat | 97.4 |
| Medium threat | 97.0 |
| Low threat | 96.3 |

- Using a binomial, with a 5% confidence interval, the estimated true favorability percentages for the three threat categories would be:

| | |
|---|---|
| High threat | 70-88% |
| Medium threat | 57-77% |
| Low threat | 73-89% |

- The overall favorable response percentage was 77.5. The five subgroupings had favorability percentages as follows:

| | |
|---|---|
| Foote | 75.8% |
| JB | 77.1% |
| Lawrence | 88.3% |
| Randall | 76.4% |
| Williams | 57.3% |

Since the confidence band for the overall favorable response percentage would be approximately 68-88%, all grour   except Williams fall within that band.

- Looking at the Williams group separately, the following was found:

| Category | Percent Favorable Response |
|---|---|
| High threat | 60.5 |
| Medium threat | 50.0 |
| Low threat | 65.8 |

Because this was the smallest group (N = 12), the difference between these percentages and those for the overall percentages amounts to at most two persons.

- Although there was not time to do a complete item analysis, a casual check in two of the largest groups was undertaken to see whether unfavorable response tended to be consistent for particular respondents.  The results suggested that this tended not to be true:

| Q. 2 "Yes" | Q. 4 "Yes" = 11 |
|---|---|
| (N = 21) | Q. 4 "No" = 9 |
| | Q. 4 "Don't Know" = 1 |
| Q. 2 "Yes" | Q. 11 "Yes" = 8 |
| | Q. 11 "No" = 13 |

In other words, unfavorable responses seem to have been scattered generally among most respondents, not concentrated among a few.

- The responses to Q. 20, the open-ended or write-in question, were content-analyzed into five possible categories.  Where more than one category was mentioned, the category discussed most was coded.  Where equal space was given to more than one category, the first mentioned was coded.  However, any mention in categories 4 or 5 was coded there.

|   | Number | Percent Mention |
|---|--------|-----------------|
| 1. Complaints about wages, hours, benefits, working conditions, advancement opportunities | 36 | 25.9 |
| 2. Complaints about bureaucracy, red tape, minor annoyances, interperson relations problems | 58 | 41.7 |
| 3. More serious complaints about procedures, safety, etc. | 2 | 1.4 |
| 4. Suggestions of intimidation | 3 | 2.2 |
| 5. None, or blank | 40 | 28.8 |

It is apparent that much of the written material in response to Q. 20 was relatively moderate in tone and was concerned for the most part with what might be termed "normal" work situation complaints. Only two respondents made comments related to category 4[a] (More serious complaints). They were:

"There has been a dramatic increase in 'hurry up' inspection. Most inspectors feel they have to rush through an inspection in order to satisfy somebody or committee for schedule reasons. The end result is mistakes and oversights. I think this is a very serious problem."

"This plant is definitely production run. Without the quality aspect this place won't get an operator's license. The QC's need to do their jobs and to do this they need the supervisor capable of letting them do the job right."

Three persons made comments coded in category 5[b] (Suggestions of intimidation):

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a. Typographical error: should read "category 4".

b. Typographical error: should read "category 5".

" . . . On a personal level, I would like to see a less antagonistic, threatening, and insecure attitude from management; i.e., I"m tired of being told to 'hit the gate' if I don't like it here. That type of comment is usually a response to some inquiry as to prospects of a weekend off or getting paid on time."

" . . . Many of us have worked at several additional nuclear plants, and we are appalled with the shoddy program here which largely consists of cover ups, smokescreens, intimidation, and harassment."

" . . . How can there be any Quality Control when there is pressure from management to get turnovers completed. Would the NRC approve?!?"

## CONCLUSIONS

- Although the pattern is positive or favorable overall, it is not overwhelmingly so. Approximately one respondent, then, in four was negative.

  - There was not, therefore, an absence of negative opinion.

  - The response rate was extremely high.

  - The most positive response was to the least, not the most, threatening items; the most threatening items were intermediate in positive response.

  - There was no prevalent pattern of skipping items, even more threatening ones.

  - Negative responses seemed to be rather broadly scattered across respondents.

- There was not a prevalent pattern of negative opinion.

- There was no discernible clustering of negative opinion within a significant minority of persons.

- Only three responses to the open-end question (Q. 20) suggested intimidation of any form.

- Almost three-fourths of the respondents responded in some way to Q.20.

The findings to the pattern points listed at the outset, therefore, disconfirm the existence of intimidation as a major factor in the survey results. The overall pattern is one of favorability, with normal and

considered variation by question or issue. Insofar as the questionnaire
survey results reflect real conditions, there is little or no evidence of
intimidation as anything but a relatively rare, coincidental occurrence.