

TITLE PAGE

**REVISED CORPORATE NUCLEAR
PERFORMANCE PLAN**

TENNESSEE VALLEY AUTHORITY

March 1986

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necessary authority to execute his broad scope of responsibility and build confidence in TVA's nuclear program. The TVA Board reaffirms the agreement reached with Mr. White as documented in the revised Memorandum of Understanding enclosed as Appendix 1 of the Revised Corporate Nuclear Performance Plan. We recognize that the safe operation of TVA's nuclear plants will require considerable resources and will succeed only with the dedication of the entire TVA nuclear organization. We are committed to ensuring that this happens.

MESSAGE FROM THE MANAGER OF NUCLEAR POWER (March 10, 1986)

On January 3, 1986, I accepted the position of TVA's Manager of Nuclear Power. I accepted that position for a two-year period with the simple commitment to correct TVA's problems in managing its nuclear program. I intend to do that. While it may take longer than two years to achieve the high level of safety and quality which TVA desires for all of its nuclear activities, I believe that two years is a sufficient period of time for me to re-establish TVA as a solid nuclear performer.

Based upon my observations during my visit to TVA in November 1985 and during the ensuing period, I have come to the opinion that TVA's most pressing problem is to improve its nuclear management. There are a number of ways to approach this problem, and I have selected the one I believe best suits the situation at TVA. I plan to concentrate on strengthening key management positions throughout TVA's nuclear organization and will make a number of organizational changes.

I have interviewed TVA's leading nuclear managers and find that they do not lack technical skill or professional knowledge. Instead, the problems I see here are similar to those sometimes found in large industrial organizations or large government facilities such as shipyards--namely, a lack of commitment to and responsibility for achieving excellence in performance.

EXECUTIVE SUMMARY
FOR THE
REVISED CORPORATE NUCLEAR PERFORMANCE PLAN
OF
TENNESSEE VALLEY AUTHORITY

Tennessee Valley Authority (TVA) has five nuclear units with operating licenses and four units with construction permits. It thus has one of the largest nuclear generation programs in the country. In response to problems which had developed in its nuclear program, TVA voluntarily shut down all of its operating units in 1985. Because of these problems and numerous employee concerns raising safety issues at Watts Bar Nuclear Plant, TVA stopped pursuing NRC concurrence that Unit 1 construction had been essentially completed in accordance with licensing commitments. On September 17, 1985, the NRC requested, pursuant to 10 CFR 50.54(f), that TVA submit information regarding its plans for correcting plant-specific problems and for correcting problems in the overall management of its nuclear program. The NRC also requested that this information be submitted before TVA restarted any of its operating units or requested an operating license for its essentially completed unit at Watts Bar. In response to this request, TVA has prepared a Corporate Nuclear Performance Plan which identifies the root causes of the problems in the management of TVA's nuclear program and describes TVA's plans for correcting those problems.

TVA is also preparing plans which will respond to the NRC's request for plant-specific information. In total, these plans will provide a complete account of the actions which TVA is taking to improve its nuclear program.

The primary cause of the problems in TVA's nuclear program is the lack of a sufficient number of experienced nuclear managers who can provide leadership and proper direction for TVA's nuclear activities. In response to this situation, TVA has restructured its organization and assigned responsibility for all of its nuclear activities to the Office of Nuclear Power directed by the Manager of Nuclear Power. Of particular note, TVA contracted for the services of Steven A. White, as Manager of Nuclear Power, and has assembled a new management workforce under his leadership. Mr. White is a retired four-star admiral who has, in his thirty-three years experience in the Navy commanded nuclear powered ships as well as the entire Atlantic Submarine Force consisting of 90 nuclear powered ships. He also managed the U.S. Navy's entire procurement program. Mr. White has assembled a management team which is effectively working to solve TVA's nuclear program problems.

The key senior managers reporting directly to Mr. White are: Charles H. Fox, Jr., as Deputy Manager of Nuclear Power, with more than twenty-one years of nuclear experience; Charles C. Mason as Deputy Manager of Nuclear Power, with twenty-three years of nuclear experience; John A. Kirkebo as Director, Nuclear Engineering, with more than twenty-two years of nuclear experience; Robert A. Pedde as Acting Director of Nuclear Construction and

Project Manager of Watts Bar Construction Project, with more than fifteen years of nuclear experience; James P. Darling as Site Director and Project Manager of Bellefonte Nuclear Plant, with more than sixteen years of nuclear experience; Nicholas C. Kazanas as Director, Nuclear Quality Assurance, with more than twenty-five years of nuclear experience; Richard L. Gridley as Director, Nuclear Safety and Licensing, with more than thirty years of nuclear experience; Herbert L. Abercrombie as Site Director of Sequoyah Nuclear Plant, with more than sixteen years of nuclear experience; George Toto, as Site Director of Watts Bar Nuclear Plant, with more than thirty years of nuclear experience; Hugo P. Pomrehn as Site Director of Browns Ferry Nuclear Plant, with more than twenty-six years of nuclear experience; James L. McAnally as Director, Nuclear Services, with twenty-five years of nuclear experience; R. Joe Johnson as Director, Division of Nuclear Training, with more than twenty-one years of nuclear experience; Marilyn E. Taylor as Manager of Nuclear Personnel, with nineteen years of experience in management of personnel administration; Ronald K. Selberling as Director of Nuclear Manager's Review Group, with more than twenty-five years of nuclear experience; William R. Brown, Jr., as Manager of Employee Concern Task Group, with more than sixteen years of nuclear experience; Eric K. Sliger as Manager, Employee Concern Program, with more than sixteen years of nuclear experience; William H. Hannum, as Chairman, Nuclear Safety Review Boards, with more than twenty-eight years of nuclear experience; Silas B. Fisher as Manager, Planning and Financial Staff, with more than thirty years of financial management experience.

In addition, the following are senior staffers reporting to the Manager of Nuclear Power, Larry L. Jackson as Assistant to the Manager of Nuclear Power, with more than fifteen years of nuclear experience; Tish B. Jenkins as Special Assistant to the Manager of Nuclear Power, with more than eleven years of nuclear experience; Carol E. Ayers as Manager of Nuclear Power Information Staff, with more than eleven years experience as a manager in information management; and Marilyn S. Blackburn as Manager, Management Training, with approximately eight years of training administration management experience.

These individuals working with the experienced TVA managers who were and remain part of the senior management workforce are capable of carrying out the NPP. The experience level for these positions has been enhanced substantially, where necessary. Only three of these individuals are in the same position as they were prior to October 1985.

In addition, the knowledge and experience base for other senior management in the Office of Nuclear Power has been upgraded and expanded by either promoting or hiring 60 experienced managers since October 1985. These managers, together with TVA's existing core of experienced nuclear managers, now provide TVA with a strong, effective management workforce having extensive nuclear experience, both from outside TVA and within TVA. Both the increase in experience and the mix of experience were elements that were judged important to achieve and maintain throughout the reorganization period.

Due to statutory limits on the salaries of TVA's employees and the limited number of available experienced managers, TVA has had difficulty in hiring experienced senior nuclear managers as permanent TVA employees. To offset these difficulties, TVA has contracted with various companies to provide individuals to the new nuclear management workforce that are not permanent TVA employees but instead are serving on a temporary basis as line managers (generally for a two-year period). TVA refers to these managers as "loaned" managers. In the short term, loaned managers will decrease; and in the long term, a sufficient supply of experienced nuclear managers for the Office of Nuclear Power will be assured by developing the managerial skills and capabilities of its permanent employees and by selecting individuals with senior management potential as deputies to selected senior nuclear managers. It is expected that deputies will develop the necessary skills and experience to replace loaned managers and to be ready to replace TVA managers who are transferred, promoted or leave TVA.

In the past, all of TVA's departments responsible for nuclear activities have not been unified into a single nuclear organization having responsibility for only nuclear activities. TVA's nuclear plants and headquarters departments have at times acted autonomously, and authority for functional activities was sometimes divided among several groups. As a result, the lines of responsibility have not always been clear, the necessary authority to implement certain programs has not always been delegated, and the implementation of TVA's overall nuclear program has not

been consistent. To remedy this, TVA has totally restructured its nuclear organization. This reorganization was accomplished through the following steps:

- For the first time in the history of TVA's nuclear program, responsibility for all nuclear activities has been consolidated within a single organization which has virtually no responsibility for non-nuclear activities. The Office of Nuclear Power is headed by the Manager of Nuclear Power, who reports directly to TVA's General Manager and Board of Directors. Thus, TVA has established a senior management position able to exercise strong and consistent control over TVA's nuclear program and to provide the necessary leadership to remedy TVA's nuclear problems.
- TVA's nuclear headquarters has been reorganized into several newly-created departments, each of which has program responsibility for a single discrete type of functional activity (such as engineering, construction, quality assurance, training, or licensing) and is headed by a director or manager. The directors and managers have the responsibility and authority to establish programs and procedures governing the functional activity assigned to that department. The director or manager will be held accountable for the technical adequacy of all activities within the department's assigned areas, including support activities provided at TVA's nuclear

plants. Through this reorganization, TVA now provides centralized direction and control of its nuclear activities.

- TVA's nuclear operating site activities are all under the day to day control of the site director. For plants under construction, all site activities are under the direction of the project manager. Support departments at each site, for example quality assurance, receive technical direction from the respective headquarters department. The site directors and project managers are responsible for the conduct of all activities at the site, especially the planning, scheduling, coordinating, and project management activities to achieve TVA's overall goals at each site. This arrangement enables TVA to provide uniform direction and improve the technical adequacy of activities at its nuclear sites, while giving the site directors and project managers greater authority in setting priorities for site activities.

In sum, by restructuring its nuclear organization, TVA has made one manager responsible for all nuclear activities, established centralized direction and control over those activities at the program level, and identified the manager responsible for program implementation. This clarification of responsibility will ensure more effective performance.

Due to TVA's lack of sufficient numbers of experienced nuclear managers and the absence of an effective organizational structure to provide leadership and proper direction to ensure the safe construction and operation of TVA's nuclear plants, many TVA employees lost confidence in TVA's nuclear management. This has resulted in a large number of employee concerns. In addition to installing a new management workforce and making other improvements in its nuclear management, TVA has taken steps which are directly intended to restore employee confidence in TVA's nuclear management. First, TVA has established an Employee Concern Program. Among other things, this program consists of full-time employee concerns personnel located at each of TVA's nuclear plants and major corporate nuclear locations. These personnel are available to receive employee concerns through several different means, including mandatory exit interviews for transferring or terminating employees. Second, TVA has policies that place paramount importance on the safety of its nuclear activities, that place the responsibility for the quality of work on the individual, and that prohibit intimidation or harassment of employees who express concerns. TVA has taken steps to ensure that these policies are communicated to employees and continue to be enforced. In particular, Mr. White has emphasized and will continue to emphasize in meetings with his managers, staff, and other employees that he will not tolerate intimidation or harassment of any kind and that he will take swift and appropriate disciplinary actions against those who engage in such actions.

In addition to these steps, TVA is making other improvements in its nuclear management program. These improvements include the following:

- Increasing Management Awareness - TVA's upper management has not always been aware of problems and developments in TVA's nuclear program or involved in their solution. By consolidating TVA's nuclear organization and placing it under the control of the Manager of Nuclear Power who reports to the TVA Board of Directors and General Manager, the flow of information to the Board and General Manager has improved. Additionally, the Board has created the Office of Inspector General and enlisted the Institute of Nuclear Power Operations (INPO) to conduct annual corporate evaluations of the nuclear power program until it is clear that the actions taken to strengthen the management and improve TVA's nuclear performance have resulted in sustained satisfactory performance.
- Improvements In Management Systems and Controls - Some of the problems in TVA's nuclear program have involved insufficient programs and procedures, a lack of prior planning and integration of nuclear activities, and a failure to satisfy prior commitments to the NRC. In response to these problems, TVA is reviewing its nuclear procedures and is establishing policies, centralized programs, and procedures to direct and/or control all TVA nuclear activities. The Office of Nuclear Power has assigned to the Division of Nuclear Services the responsibility to develop an integrated management

information system. The Planning and Financial Staff has the responsibility for centralized planning, scheduling, and financial controls. Additionally, TVA has implemented a nuclear Corporate Commitment Tracking System under the Division of Nuclear Safety and Licensing.

- Improvements In TVA's Corrective Action Program - In the past, TVA has not always taken timely and effective corrective action for problems associated with its nuclear activities. To remedy this, TVA is improving its nuclear corrective action program to provide for (1) tracking of conditions adverse to quality and prompt escalation of those conditions which are not resolved in a timely manner to higher levels of management, (2) trending of conditions adverse to quality and analysis of significant trends to identify their root causes for corrective action, and (3) centralized analysis of problems at other nuclear plants to identify the need for remedial or preventive action at TVA's nuclear plants.
- Programmatic Improvements - In response to weaknesses found in certain of its programs, TVA has taken actions to improve discrete areas of its nuclear program, including welding, operations, maintenance, and control of design changes and modifications.

TVA developed and submitted a Nuclear Performance Plan for its Sequoyah and Browns Ferry Nuclear Plants. TVA is also developing a Nuclear Performance Plan for its Watts Bar plant which will address site-specific problems. This will be submitted to the NRC for their review and evaluation prior to TVA's request for startup of Watts Bar.

In sum, TVA has taken significant steps to improve the management of its nuclear program. These include installing new experienced managers to provide leadership and direction for TVA's nuclear activities, consolidating TVA's nuclear departments within a single organization to clarify lines of authority and responsibility and to provide greater management control over TVA's nuclear activities, and establishing an Employee Concern Program to help restore employee confidence in TVA's nuclear management. TVA is continuing to evaluate its problems to identify the need for specific improvements in its overall nuclear program and in its site activities. TVA will provide the NRC with a proposed schedule for startup of each nuclear plant as this evaluation process is completed.

I. PURPOSE

On September 17, 1985, pursuant to 10 CFR 50.54(f), the Nuclear Regulatory Commission (NRC) requested the Tennessee Valley Authority (TVA) to furnish information related to problems which had developed at its nuclear power plants (Reference 1). Among other things, the NRC identified an area of concern regarding "programmatic and management deficiencies that have contributed to the continued poor direction and control of [TVA's] nuclear activities," and the NRC requested TVA to describe corrective actions in this general area. In compliance with this request, TVA presented a Corporate Nuclear Performance Plan (NPP) to the NRC on November 1, 1985 (Reference 2).

Subsequent to submission of the Corporate NPP, TVA made significant changes in its nuclear management personnel. As a result, TVA re-evaluated its approach for correcting the problems which have arisen in its nuclear program and developed a Revised Corporate NPP which was submitted on March 10, 1986 (Reference 7). Three subsequent revisions of the Revised Corporate NPP were provided to further update the Revised Corporate NPP and to address the NRC's questions communicated on May 1, 1986 (Reference 8). During an interim period while contractual arrangements were being revised, TVA made temporary adjustments which were described in Revision 3 of this plan.

This revision of the Revised Corporate Nuclear Performance Plan addresses the resolution of these temporary adjustments previously described in Revision 3, changes in management, changes in the management training program, and the status of implementation of corporate NPP commitments. As such, this report not only responds to the NRC's specific request for information under 10 CFR 50.54(f) regarding TVA's corporate nuclear activities, but also presents an integrated plan for addressing the NRC's general concern about TVA management of the nuclear power program.

TVA earlier submitted separate volumes of the Nuclear Performance Plan for its Sequoyah Nuclear Plant and its Browns Ferry Plant. TVA is now preparing to submit a fourth volume of the Nuclear Performance Plans for its Watts Bar Nuclear Plant as soon as it is complete. In total, the Revised Corporate Nuclear Performance Plan and the plant-specific plans along with the revisions thereto, will provide a complete account of the actions which TVA has taken or will be taking to improve its nuclear program.

II. INTRODUCTION

A. History and Background

TVA is an agency of the Federal government whose purpose is, among other things, to supply electricity to customers in the area of the Tennessee River Valley. TVA has one of the largest nuclear power programs in the country, with operating licenses for five units (Browns Ferry Nuclear Plant, Units 1, 2, and 3; and Sequoyah Nuclear Plant, Units 1 and 2) and construction permits for four other units (Watts Bar Nuclear Plant, Units 1 and 2; and Bellefonte Nuclear Plant, Units 1 and 2).

During the last few years, several events have occurred which have reflected adversely upon the quality of performance of TVA's nuclear activities. In response to these and other events, TVA has voluntarily shut down its Browns Ferry and Sequoyah plants and has deferred requesting an operating license for its essentially complete Watts Bar Unit 1.

On September 17, 1985, the NRC issued a Systematic Assessment of Licensee Performance (SALP) Report of TVA's nuclear activities (Reference 1). This report identified a number of weaknesses in the conduct of TVA's nuclear activities. Based upon the conclusions in this report and the recent history of

TVA's nuclear activities, the NRC concluded that TVA had "demonstrated ineffective management of its nuclear program." As a result, the NRC requested that TVA develop corrective action for the "programmatic and management deficiencies that have contributed to the continued poor direction and control of nuclear activities," as well as corrective action for the plant-specific deficiencies. Although the NRC recognized that TVA had already taken some actions to address these concerns, the NRC requested pursuant to 10 CFR 50.54(f) that TVA document its corrective actions prior to restarting its operating units and prior to requesting an operating license for Watts Bar Unit 1.

B. Outline of TVA's Approach to Solving its Nuclear Problems

TVA has reviewed the problems which have developed in its nuclear program during recent years in order to identify the causes of these problems. As a result of this review, TVA has formed judgments regarding the root causes of the problems in its nuclear program. In order to confirm this judgment, TVA assembled a team of senior, experienced industry advisors to analyze more than 800 documents which contained criticisms of TVA's nuclear activities and to identify any adverse trends and their root causes. In general, the results of this analysis agreed with the

judgments formed by TVA regarding the source of the problems in TVA's nuclear program. Although the individual problems are varied, many of them stem from the same cause--namely, the lack of a sufficient number of experienced managers to provide leadership and proper direction coupled with the absence of an effective organizational structure to ensure the safe design, construction and operation of TVA's nuclear plants. As a result, many TVA employees have lost confidence in TVA's management.

As is discussed in the remainder of this report, TVA has taken, and is planning to take, actions to provide effective management of its nuclear program and to restore employee trust in TVA's nuclear management. This objective is accomplished through the following actions:

1. Effective Management of Nuclear Activities

TVA is providing effective management of its nuclear activities through the combination of hiring, development and retention of experienced nuclear managers, and the use of loaned managers. Section III of this report describes TVA's short-term and long-term efforts to provide experienced managers for its nuclear activities.

2. Restructuring of Nuclear Organization

TVA has restructured its nuclear organization to centralize the responsibility and authority under the Manager of Nuclear Power. Within the Office of Nuclear Power, a new organizational structure has been implemented and position descriptions have been developed to provide centralized direction and control of its nuclear activities. A description of this restructuring and the new organization is provided in Section IV.

3. Restoring Employee Trust

TVA is taking steps to restore employee trust in its nuclear management. These steps are discussed in Section V.

4. Improving Control of Nuclear Activities

In order to facilitate effective management and control of its nuclear activities, TVA has been and will be implementing changes in the manner in which its nuclear activities have been managed. These changes include increasing upper management awareness of and involvement in TVA's nuclear activities, improving TVA's nuclear

management systems and controls, improving TVA's nuclear corrective action program, and making improvements in programmatic areas. These changes are discussed more fully in Section VI of this report.

The subsequent sections of this report describe the major elements of the Corporate NPP and address the NRC's request for information under 10 CFR 50.54(f). TVA's responses to the NRC's specific requests regarding Corporate Activities (Enclosure 2 of Reference 1) are provided in Appendix 2. Additionally, Appendix 3 provided TVA's revised responses to the NRC's December 20, 1985, questions regarding the original Corporate NPP (Reference 3).

The Sequoyah Nuclear Performance Plan (Volume 2) and the Browns Ferry Nuclear Performance Plan (Volume 3) were submitted on November 1, 1985 and August 28, 1986 respectively. Revisions to these plans have been and will be submitted to reflect the results of TVA's detailed assessment of changes, modifications, corrective action, and improvements necessary to ensure safe startup and operation of the plants. TVA is also preparing the Watts Bar Nuclear Performance Plan (Volume 4).

Appendix 7 provides a summary of the responses to the NRC's questions regarding the Corporate NPP contained in its letter of May 1, 1986 (Reference 8). Finally, Appendix 8 provides a status of Corporate NPP commitments which is updated with each revision of this NPP.

TVA is implementing its new nuclear organization, developing many of the new programs which will be used to manage its nuclear activities, focusing resources for achieving resolution of identified issues, preparing many of the new plans which address plant-specific nuclear problems, and responding to the NRC's questions regarding these problems. TVA has revised the schedule for the restart of Sequoyah Unit 2 to July 1987 and will revise the schedules for resumption of operation of its Sequoyah Unit 1 and the Browns Ferry units.

III. HIRING, DEVELOPMENT, AND RETENTION OF SENIOR NUCLEAR MANAGERS

In general, the problems in TVA's nuclear program during the last several years are attributable to a lack of a sufficient number of experienced nuclear managers. TVA's first priority has been to obtain experienced managers for its nuclear activities. TVA's approach was to gain management talent through a combination of utilizing existing experienced TVA managers, hiring new managers as permanent TVA employees and contracting for experienced nuclear managers to serve as loaned managers. These managers have been assembled to provide the leadership and direction which are essential to correct TVA's remaining nuclear problems and assure the safety of operation of TVA's nuclear plants.

The need for a sufficient number of experienced nuclear managers represents both a short-term and a long-term problem for TVA. As a result, TVA has taken and will be taking actions to address both of these concerns. These actions are described in the following paragraphs

A. TVA's Short-Term Actions to Provide for a Sufficient Number of Experienced Nuclear Managers

At the time the NRC issued its request for information pursuant to 10 CFR 50.54(f), TVA had an immediate need for additional experienced nuclear managers. Since TVA did not have an

adequate number of experienced nuclear managers in-house, it sought to hire experienced nuclear managers from outside of TVA's organization.

Due to statutory limitations on the salaries of TVA employees and the limited number of available experienced managers, TVA continues to have difficulty in hiring senior experienced nuclear managers. To help offset the salary differential between TVA nuclear employees and managers in private industry, the TVA Board of Directors has approved several incentives including: a home purchase relocation service, and a relocation incentive payment plan. TVA is also considering other enhancements to improve the compensation plan for selected managers. Although significant progress has been made, TVA has not been able to hire a sufficient number of experienced senior nuclear managers as regular TVA employees. As a result, TVA continues on a limited basis to contract with various companies in the nuclear industry to obtain experienced individuals to serve as TVA managers.

1. TVA's New Key Senior Nuclear Management

To date, TVA has been largely successful in establishing a new management workforce with extensive nuclear experience through a combination of utilizing existing experienced TVA

managers, hiring new experienced managers as permanent TVA employees, and contracting for the use of experienced managers on a temporary basis.

Table 1 provides a listing of the individuals holding positions as key senior managers. Twenty-two of TVA's top twenty-five positions in its nuclear organization have been filled with new or different individuals since October 1985.

The following sections describe the responsibilities and experience of key senior management. Although the individuals in specific positions may change from time to time, the general level of experience, qualification and functional responsibilities will be preserved.

a. Manager of Nuclear Power (Steven A. White)-

An arrangement has been made to make available to TVA a highly experienced Manager of Nuclear Power, Steven A. White. Mr. White is a retired four-star admiral who was head of the U.S. Navy's procurement program, commanded the Atlantic Submarine Force, and has experience in reactor operation and maintenance.

Mr. White is in charge of all TVA nuclear activities and is the primary motivating force behind the improvements which TVA has identified and intends to make in its nuclear program.

b. TVA Employees in Key Senior Management positions

Since October of 1985, a number of experienced managers have been added to TVA's key senior nuclear managers workforce. Additionally, as previously described, permanent TVA employees have been selected to fill these positions. The following paragraphs outline the experience and responsibilities of those key senior TVA employees.

Deputy Manager of Nuclear Power (Charles C. Mason) -

TVA has hired Charles C. Mason as a permanent TVA employee to be a Deputy Manager of Nuclear Power.

Mr. Mason has more than twenty-three years of nuclear experience, much of it with TVA, including positions of Director of Nuclear Operations and Site Director of the Wolf Creek Nuclear Generating Station, Site Director and Plant Manager of Sequoyah Nuclear Plant, and Power Plant Superintendent of Watts Bar Nuclear Plant. Mr. Mason assists the Manager of Nuclear Power in the

management of TVA's nuclear activities through the focus of his technical and management experience on operational matters and acts for him in his absence.

Deputy Manager of Nuclear Power (Charles H. Fox, Jr.) -

TVA has hired Mr. Fox as a permanent TVA employee. He was the Assistant Manager of Nuclear Power and is now a Deputy Manager of Nuclear Power. Mr. Fox has twenty-one years of nuclear experience including his most recent position of Assistant Manager of Nuclear Power. He has held the position as Assistant Manager of Project Management at the USDOE's Savannah River Plant, and prior to that was Chief Engineer at the Clinch River Breeder Reactor Project (CRBRP). Prior to the CRBRP assignment, Mr. Fox functioned as the Engineer Manager on the Gas Centrifuge Enrichment Project after having served as the Deputy Engineer Manager and Director of Systems Engineering. Mr. Fox assists the Manager of Nuclear Power in the management of TVA's nuclear activities through the focus of his technical and management experience on engineering and construction matters and acts for him in his absence.

Director, Division of Nuclear Engineering (J. A. Kirkebo) - TVA has hired Mr. Kirkebo as a permanent TVA employee. Prior to his current assignment, Mr. Kirkebo had more than twenty-two years of nuclear experience, including positions within the Division of Nuclear Engineering, as a loaned manager to TVA from SWEC, and as Senior Project Engineer, Gulf States Utilities Company, River Bend Station, Unit 1.

The Division of Nuclear Engineering is responsible for all of TVA's engineering activities that support the design, construction, modification, operation and maintenance of TVA's nuclear facilities. This includes the responsibility for developing the design basis and technical record of the as-built facility for each of TVA's nuclear power plants. The Division of Nuclear Engineering is also responsible for developing and maintaining an Engineering Assurance program which conforms with all of the appropriate regulatory criteria.

Director, Division of Nuclear Services (J. L. McAnally)
- Mr. McAnally is a permanent TVA employee. Prior to being assigned to his current position Mr. McAnally has twenty-five years of nuclear experience, including

positions as Chief, Financial Management Staff, Planning and Budget for the TVA Office of Corporate Administration and Planning and as Senior Financial Analyst, Planning and Budget for the Office of the General Manager. Prior to joining TVA, Mr. McAnally was the Project Engineer, Construction, for San Diego Gas and Electric's Sundesert Nuclear Plant Project and was Project Manager for Commonwealth Edison's Byron and Braidwood nuclear plant projects as well as Director of Construction Scheduling and Cost Control.

The Division of Nuclear Services is responsible for technical and program direction and support for TVA's nuclear activities. The primary functions for which the division is responsible are: Industrial Health and Safety, Nuclear Procedures System, Nuclear Fuels, Emergency Preparedness, Radiological Control, Configuration Management, Document Control and Records Management, Management Information Systems and data processing, and support operations programs, such as fire protection, security, nuclear insurance and non-radiological environmental protection.

Director, Division of Nuclear Training (R. Joe Johnson)-

Mr. Johnson is a TVA employee. Prior to being assigned to his present position, Mr. Johnson has twenty-one years of nuclear experience including positions of Chief, Nuclear Training Branch for TVA and Coordinator, Power Production Training Center for TVA.

The Division of Nuclear Training manages the training facilities and programs in order to provide management training programs and technical training to personnel in support of the TVA nuclear power program; ensures that nuclear power plant operators receive the initial and continuing training necessary to operate TVA's nuclear facilities; and develops, implements, and upgrades training programs for TVA nuclear activities including obtaining Institute of Nuclear Power Operations (INPO) accreditation for such programs.

Site Director/Nuclear Project Manager of Bellefonte

(J. P. Darling) - Mr. Darling is a TVA employee and has been in his present position for two years.

Mr. Darling has more than sixteen years of nuclear experience including a position of Deputy Manager, Office of Power and Manager of Power Engineering.

Mr. Darling has the dual role of Site Director and Nuclear Project Manager of Bellefonte. He is responsible for managing all project management and site activities to ensure safe, reliable, and efficient plant construction and operation in conformance and compliance with ONP policy and applicable Federal, state, and local regulations. This includes planning, scheduling, coordinating, and providing project direction for the activities of the site support organizations.

Site Director of Sequoyah (H. L. Abercrombie) -

Mr. Abercrombie is a TVA employee. Mr. Abercrombie has been in his present position for two years and has more than sixteen years of nuclear experience, including positions of Director, Division of Nuclear Services, Assistant Manager, Nuclear Production, and Browns Ferry Power Plant Superintendent.

Mr. Abercrombie, as the Site Director of Sequoyah, is responsible for managing all site activities including plant modifications to ensure safe, reliable, and efficient operation in conformance and compliance with ONP policy and applicable Federal, state, and local, regulations. This includes planning, scheduling,

coordinating, and providing project direction for the activities of the site support organizations.

Acting Director, Division of Nuclear Construction and Nuclear Project Manager, Watts Bar Unit 2 (R. A. Pedde)

Mr. Pedde is a TVA employee. Prior to being assigned to his current position, Mr. Pedde had more than fifteen years of nuclear experience including the position of Assistant to the Manager of TVA's Office of Construction.

Mr. Pedde has the dual role of Acting Director of Nuclear Construction and Watts Bar Nuclear Plant Project Manager. The Division of Nuclear Construction develops plans and procedures for and manages the construction of TVA's nuclear facilities through completion (including verification that the construction work meets quality standards) and turnover to TVA's plant operations organization. The Division also manages modifications to operating nuclear facilities under the direction of the site director. Mr. Pedde is also currently responsible for all project management activities for Watts Bar Unit 2 to ensure completion of the design and construction of a safe, reliable, and efficient plant within scope and cost and

on schedule. This is to be accomplished in compliance with ONP policy and applicable Federal, state, and local regulations. The responsibilities include planning, scheduling, and providing project direction for the activities of the site support organizations.

Assistant to the Manager of Nuclear Power (L. L. Jackson) - Mr. Jackson is a TVA employee. He has more than fifteen years of nuclear experience, including his prior position as Chemistry Department Manager and Evaluation Team Manager for the Institute of Nuclear Power Operations (INPO).

As Assistant to the Manager of Nuclear Power, Mr. Jackson provides management support to the Manager of Nuclear Power.

Chairman, Nuclear Safety Review Boards - (William H. Hannum) - TVA has hired William H. Hannum as a permanent TVA employee to be Chairman of the Nuclear Safety Review Boards. Mr. Hannum has more than twenty-eight years of nuclear experience, including positions of Director, West Valley Project Office of the U.S. Department of Energy, Deputy Director General of the Organization for Economic Cooperation and

Development (OECD) Nuclear Energy Agency, Deputy Manager, Idaho Operations Office U.S. Department of Energy, and Assistant Director for Reactor Safety, U.S.-ERDA (DOE).

Mr. Hannum is in charge of the activities of the Nuclear Safety Review Boards. There is a Nuclear Safety Review Board for each operational nuclear plant site which provides an independent review of all safety-related activities for that site. The Nuclear Safety Review Boards provide the overall assessment of the safety of nuclear plant operations to the Manager of Nuclear Power, together with the recommendations on improvements as requested.

Manager, Planning and Financial Staff (S. B. Fisher) -
Mr. Fisher is a TVA employee. Prior to being assigned to his current position, Mr. Fisher had more than thirty years of financial management experience, including positions as Director, Fiscal and Information Management for General Public Utilities Nuclear Corporation for six years and Director of Planning and Finance at Clinton Nuclear Plant for two years. The Planning and Financial Staff is responsible for providing planning, scheduling, and financial support functions (including coordination with Purchasing) for the Office of Nuclear Power.

Manager of Nuclear Personnel (Marilyn E. Taylor)

Ms. Taylor is a TVA employee. Prior to being assigned to her current position, Ms. Taylor has nineteen years of experience in management of personnel administration, including a position of Director of Personnel for TVA. Ms. Taylor is the Manager of Nuclear Personnel and is responsible for the recruiting, hiring, management development planning, classification, and labor relations for ONP.

Manager, Employee Concern Task Group (W. R. Brown, Jr.)

Mr. Brown is a TVA employee. Prior to being assigned to his current position, Mr. Brown had more than sixteen years of nuclear experience, including the position of Acting Director, Nuclear Construction, Project Manager, Watts Bar Nuclear Plant, and Bellefonte Nuclear Plant. The objective of the Employee Concern Task Group is to investigate, evaluate and resolve through corrective actions employee concerns identified through special programs initiated within TVA in 1985.

Manager, Employee Concern Program (E. K. Sliger) -

Mr. Sliger is a TVA employee. Mr. Sliger has more than sixteen years of nuclear experience including a position as Staff Assistant, Office of Nuclear Power

for TVA. Mr. Sliger is responsible for developing, implementing and managing the Employee Concern Program, which includes the receipt, evaluation and initiation of action to resolve employee concerns regarding any TVA nuclear activities.

Special Assistant to the Manager of Nuclear Power

(T. B. Jenkins) - Ms. Jenkins is a TVA employee. She has more than eleven years of nuclear experience, including her prior position as the Manager of Nuclear Research Projects for TVA. Ms. Jenkins assists the Manager of Nuclear Power in oversight and coordination of intimidation and harassment issues and employee concerns programs.

Manager of Nuclear Power Information Staff (C. E.

Ayers) - Ms. Ayers is a TVA employee. She has more than eleven years experience as a manager in information management including her prior position of Public Affairs Specialist, National Aeronautics and Space Administration, Marshall Space Flight Center. Ms. Ayers assists the Manager of Nuclear Power in media and public communications, employee communications, and emergency public information program.

Manager of Management Training (M. S. Blackburn) -

Ms. Blackburn is a TVA employee. She has approximately eight years of management training experience including her prior position of Organization Development Consultant for TVA. Ms. Blackburn assists the Manager of Nuclear Power in developing the management training program for the Office of Nuclear Power.

- c. Loaned Key Senior Managers - Where judged to be vital by TVA in order to maximize the involvement of available industry nuclear managers, a number of key senior nuclear management positions have been filled by contracting with companies in the nuclear industry for certain highly qualified individuals. Special arrangements have been made for these seasoned managers to serve in loaned management positions. The following paragraphs outline the experience and responsibilities of each of these key loaned managers.

Director, Division of Nuclear Quality Assurance

(Nicholas C. Kazanas) - Mr. Kazanas is an employee of GPU Nuclear (GPUN) Corporation. TVA has contracted with GPUN for Mr. Kazanas' services as Director of Nuclear Quality Assurance. Prior to joining TVA in his current position, Mr. Kazanas had more than twenty-five

years of nuclear experience, including a position as Director, Quality Assurance for six years for GPUN Corporation.

The Division of Nuclear Quality Assurance is responsible for establishment and management of all of TVA's nuclear quality assurance and quality control activities that support the design, construction, operations and modification of TVA's nuclear facilities.

Director, Division of Nuclear Safety and Licensing

(Richard L. Gridley) - Mr. Gridley is an employee of General Electric (GE). TVA has contracted with GE for Mr. Gridley's services as Director of Nuclear Safety and Licensing. Mr. Gridley has more than thirty years of nuclear experience, including positions of Manager of Fuel and Services Licensing and Manager of Operating Reactor Licensing for GE.

The Division of Nuclear Safety and Licensing is responsible for the establishment of Nuclear Safety Programs consistent with ONP policy and for the central control and conduct of licensing activities in a consistent manner for all of TVA's nuclear facilities.