

~~RELATED CORRESPONDENCE~~

April 21, 1983

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE
ATOMIC SAFETY AND LICENSING BOARD

'83 APR 21 P4:18

In the Matter of)
)
UNITED STATES DEPARTMENT OF ENERGY)
)
PROJECT MANAGEMENT CORPORATION)
)
TENNESSEE VALLEY AUTHORITY)
)
(Clinch River Breeder Reactor Plant))
)

Docket No. 50-537

APPLICANTS' UPDATED RESPONSE TO
INTERVENORS' INTERROGATORIES

Pursuant to 10 C.F.R. § 2.740b, the United States Department of Energy and Project Management Corporation, for themselves and on behalf of the Tennessee Valley Authority (the Applicants), hereby submit their updated response to Intervenors' Interrogatories requesting the identity of Applicants' witnesses at the Construction Permit hearings.

CONTENTIONS 2(f)-(h), 3(c), 10

Hans K. Fauske
Lee Strawbridge
Walter Deitrich

In addition, Applicants may present the following witnesses to supplement this panel:

Dennis W. Switick
Truman W. Ball
Glen H. Nickodemus
David P. Weber

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Statements of Qualification for Messrs. Strawbridge and Deitrich have already been provided to Intervenor. Statements of Qualifications for Messrs. Fauske, Switick, Ball, Weber and Nickodemus are attached.

CONTENTIONS 1(a)-(b), 3(a)-(b), 10

George Clare
Lee Strawbridge
Robert E. Hottel
H. P. Planchon

In addition, Applicants may present the following witnesses to supplement the panel:

Ambrose Schwallie
Truman W. Ball
Peter J. Gross

Statements of Qualifications for Messrs. Strawbridge and Clare have already been provided to Intervenor. Statements of Qualifications for Messrs. Hottel, Planchon, Ball and Gross are attached. Mr. Schwallie's Statement will be forwarded to Intervenor in the near future.

CONTENTIONS 9(c), (f)-(g)

Eric K. Sliger
H. P. Planchon
Lee Strawbridge

In addition, Applicants may present the following witnesses to supplement this panel:

Wayne Hibbitts
Truman W. Ball
Robert J. Bowman

Statements of Qualifications for Messrs. Strawbridge and Hibbitts have already been provided to Intervenors.

Statements of Qualifications for Messrs. Sliger, Planchon, Bowman and Ball are attached.

STATEMENT OF QUALIFICATIONS

Hans K. Fauske

Hans K. Fauske, President of Fauske & Associates, Inc., received the D.Sc. degree from the Norwegian Institute of Technology in 1963. For eighteen years he was with the Argonne National Laboratory where he became the first Director of the Fast Reactor Technology Management Center responsible for the development and execution of all Department of Energy programs related to the resolution of fast reactor safety concerns. He was also one of the first recipients of the University of Chicago Award for Distinguished Performance at Argonne.

Dr. Fauske has served as a consultant to the U.S. Advisory Committee on Reactor Safeguards, the President's Commission investigating the accident at Three Mile Island, the Swedish Government Committee on Steam Explosions, the German Safety Commission which conducted the PRA study on the SNR-300, and has testified at numerous hearings before the U.S. Nuclear Regulatory Commission relative to the licensing of nuclear reactors and has made extensive contributions in connection with the assessment of accident risks in the FFTF and CRBRP systems. He now consults for several domestic and foreign corporations in the chemical and nuclear industries. Current activities include serving as a Senior Consultant to the U.S. nuclear industry's IDCOR Program, Project Director of Phase 1 PRA study of the CRBRP which is providing the core and containment phenomenological

event trees and the success/failure criteria in regard to core damage, and heading up the ongoing CRBRP licensing activities in the area of core disruptive accident energetics.

Formerly a visiting professor of chemical and nuclear engineering at Northwestern University and author of more than 200 publications, Dr. Fauske has made numerous technical presentations at universities and conferences throughout the world. He is a member of the Editorial Board of the International Journal of Multiphase Flow, a Member of the American Institute of Chemical Engineers, and a Fellow of the American Nuclear Society. In 1982, he became the third recipient of the T.J. Thompson Award for outstanding contributions to Fast Reactor Safety, the highest honor that the American Nuclear Society gives in the field of reactor safety.

STATEMENT OF QUALIFICATIONS

Dennis M. Switick
Manager, Safety Analysis Unit
General Electric Advanced Reactor Systems Department
Sunnyvale, CA 94086

From 1980 to the present, I have served as Manager, Safety Analysis Unit, with responsibility for performing an assessment of core disruptive accident energetics potential in the CRBRP. These activities included coordination among the national laboratories and other CRBRP project contractors to encompass all key issues in the energetics: CRBRP-GEFR-00523, "HCDA Energetics in the CRBRP Hetrogeneous Reactor Core."

I received a Bachelor of Science degree in Engineering Science from Pratt Institute in 1962 and a Master of Engineering in Aerospace Engineering from the State University of New York at Buffalo in 1967.

Upon completion of my Masters degree work in 1966 I joined the General Electric Company, Nuclear Division. Between 1966 and 1974, my position changed from Engineer to Senior Engineer. I was involved in a number of thermal hydraulic developments, safety experiments review, and the formulation/application of mechanistic approaches to core disruptive accidents.

From 1974 to 1980, my position was that of Senior Engineer with primary responsibility for CRBRP core disruptive assessments including close coordination with Argonne National

Laboratories and major contributions to the CRBRP PSAR, Appendices D and F. During this period I also participated in two DOE national level committees on core disruptive accident issues. These activities included review of and recommendations for the DOE research effort in the core accident area.

I am a Professional Engineer, registered in the State of California.

STATEMENT OF QUALIFICATIONS

Glen H. Nickodemus
Manager, Stress Analysis
Westinghouse Advanced Energy Systems Division
Madison, Pennsylvania 15663

From January 1982 to the present, I have served as Manager of Stress Analysis with responsibility for the stress analysis of the various CRBRP equipment items. The reactor vessel and internals and the reactor vessel closure head and head mounted equipment are among the major responsibilities of the organization. We are also responsible for the analysis of the reactor guard vessel and reactor cavity equipment.

I received a Bachelor of Science degree from Michigan State University in 1964 and a Master of Science degree from Carnegie-Mellon University in 1973. Both of these degrees are in Civil Engineering.

I joined the Pittsburgh-Des Moines Steel Company following graduation from MSU. I performed various assignments for the company between 1964 and 1969. These assignments included the stress analysis of various structures, including the Loss of Fluid Test Facility (LOFT) Containment Vessel.

I joined the Westinghouse Advanced Reactors Division in 1969. Between 1969 and 1975, I performed stress analyses of various Fast Flux Test Facility (FFTF) reactor components, including the reactor vessel, closure head, core support structure, and control rod drivelines. My position changed from Engineer to Senior Engineer in this time period.

Stress analysis for the Clinch River Breeder Reactor became my major assignment in 1975. I was the Lead Engineer for the analysis of various CRBRP reactor components between 1975 and 1982. These components include the closure head and riser assemblies, reactor vessel, and upper internals structure. My position changed from Senior Engineer to Principal Engineer in this time period.

I am a member of the American Society of Mechanical Engineers and became a registered Professional Engineer in the Commonwealth of Pennsylvania in 1976.

STATEMENT OF QUALIFICATIONS

Robert E. Hottel
Westinghouse Advanced Energy Systems division
Oak Ridge, Tennessee 37830

From 1980 to the present I have served as Manager of Systems Engineering for CRBRP, Westinghouse-Oak Ridge, with responsibility for management and integration of selected overall plant systems. These activities include development of specific requirements to insure that overall criteria are satisfied, consideration of plant system and components to insure specified requirements are met, and responsibility for specific system design.

I received a Bachelor of Science degree in Physics from Bethany College in 1967 and have done graduate work at Columbia University (1968) and the University of Tennessee (1975-1977).

From 1969 to 1974, I served in the U. S. Navy. While in the Navy, I attended Officer Candidate School, Nuclear Power Training School, and Naval Nuclear Prototype. Following nuclear training, I served as an Engineering Officer on a nuclear submarine, with responsibility for supervision, maintenance, and operation of the nuclear engineering plant.

After leaving the Navy, I joined Westinghouse Electric Corporation as an Engineer at the Advanced Reactors Division. Between 1974 and 1980, my position changed from Engineer to Senior Engineer. I was involved in developing overall design requirements, analyzing specific systems and components, and

conducting overall reviews of specific system operability.

STATEMENT OF QUALIFICATIONS

H. P. Planchon
Westinghouse Advanced Reactors Division
Oak Ridge, Tennessee 37830

Since 1980, I have been the Manager of Plant Systems and Safety Related Design at Westinghouse Oak Ridge (CRBRP) with responsibilities in areas of plant instrumentation, control, the plant computer system, and plant operations. I am presently responsible for the emergency response facility design, integration of instrumentation for accident monitoring, and integration of the control room design and overall plant operations.

I received a Bachelor of Science degree in Mechanical Engineering from the University of Missouri (Columbia) in 1964, and a Doctor of Philosophy degree in Nuclear Engineering from the University of Illinois (Urbana) in 1974.

Following graduation from the University of Missouri, I served in the U.S. Navy nuclear program with responsibilities for engineering, maintenance, and operations aboard operating submarines. I left the Navy in 1970 to return to graduate school at the University of Illinois.

I joined the Advanced Reactors Division of the Westinghouse Electric Corporation in 1974 as a Senior Engineer. I worked there in the Clinch River Project Performance Analysis group. I was promoted to Principal Engineer in 1979. The work included developing analysis methods and computer codes and performing whole plant safety and design analysis for the Clinch

ration of plant system and components to insure specified requirements are met, and responsibility for specific system design.

I received a Bachelor of Science degree in Physics from Bethany College in 1967 and have done graduate work at Columbia University (1968) and the University of Tennessee (1975-1977).

From 1969 to 1974, I served in the U. S. Navy. While in the Navy, I attended Officer Candidate School, Nuclear Power Training School, and Naval Nuclear Prototype. Following nuclear training, I served as an Engineering Officer on a nuclear submarine, with responsibility for supervision, maintenance, and operation of the nuclear engineering plant.

After leaving the Navy, I joined Westinghouse Electric Corporation as an Engineer at the Advanced Reactors Division. Between 1974 and 1980, my position changed from Engineer to Senior Engineer. I was involved in developing overall design requirements, analyzing specific systems and components, and

conducting overall reviews of specific system operability.

STATEMENT OF QUALIFICATIONS

Peter J. Gross
Assistant Director, Public Safety Division
Clinch River Breeder Reactor Plant Project
Oak Ridge, TN 37830

From July 1982 to the present, I have served as Assistant Director for Public Safety, Clinch River Breeder Reactor Plant Project, Oak Ridge, Tennessee, with responsibility for organizing, staffing and managing the Public Safety Division in the activities of licensing, risk assessment, environmental monitoring and control of public and industrial safety concerns associated with the CRBRP Project.

I received a Bachelor of Science degree in Mechanical Engineering from Lowell Technological Institute in 1966 and a Master of Science degree (nuclear engineering) from Purdue University in 1968.

After receiving my degree, I joined the Atomic Energy Commission in Maryland, where I developed program plans associated with development of nuclear reactor refueling equipment and fuel transport equipment for use in the LMFBR industry-monitored design and development of Fast Flux Test Facility refueling equipment.

In 1967, I was assigned to a one-year course of study at Purdue University. Course work in mechanical and nuclear engineering and one year experimental work in liquid metal heat transfer led to my Master's Degree in nuclear engineering.

In 1968, I was a Reactor Engineer with Pacific Northeast

Laboratory in Richland, Washington, where I performed design, safety and performance analysis of the Fast Flux Test Facility reactor core, containment building and heat transport system.

In 1969, as a Reactor Engineer, Core Design Branch, AEC Headquarters, I directed contractor design, development, and fabrication efforts on the Fast Flux Test Facility inreactor test facilities for testing fuels and materials, reactor core components, and test programs supporting the overall reactor design and safety development.

In 1972, I became a Site Representative, Experimental Breeder Reactor-II site, at Idaho Falls, Idaho. I represented the Reactor Development and Technology Division of AEC in providing program direction and guidance to contractors at the EBR-II site. Effort involved liaison and coordination between headquarters, field office, and contractors and in interpreting program policy and providing direction to the contractors for control rod and fuel design, fabrication, and procurement; fuels, materials, and safety experiments in EBR-II, TREAT, and SLSF; reactor operations; design, construction, equipping, and operations of hot cells for radioactive experiment examinations; quality assurance efforts; industrial safety and health physics efforts; and general site services projects.

From 1972 through 1975, I was the Senior Reactor Engineer, Reactor and Plant Systems Branch, Clinch River Breeder Reactor Plant Project, with responsibility for the design, development, procurement, licensing, and successful operation of

all the nuclear reactor core components.

From 1975 through 1978, I was Assistant Chief, Reactor and Plant Systems Branch, Office of Engineering, with principal responsibility for assuring adequate contractor performance of technical and management duties concerned with the design, development, fabrication, procurement, testing, licensing, scheduling, and cost control of the CRBRP reactor, refueling, and auxiliary systems.

From 1978 through 1981, I was assigned as Deputy Chief, Reactor and Plant Systems Branch, CRBRP, with responsibility for overall management of the RPS Branch and management of Engineering Division licensing and safety-related actions.

STATEMENT OF QUALIFICATIONS

Eric K. Sliger
Tennessee Valley Authority (TVA)
Chattanooga, Tennessee 37401

I received a Bachelor of Science degree in Nuclear Engineering from the University of Tennessee, Knoxville, in 1970. While attending the University of Tennessee, I worked as a co-op student at the Oak Ridge Gaseous Diffusion Plant. I have completed all course work towards a Master of Science degree in Engineering Administration through graduate work at the University of Tennessee, Knoxville and Chattanooga campuses.

Upon graduating from the University of Tennessee, Knoxville, in 1970, I joined the Tennessee Valley Authority as a nuclear engineer in the Division of Power Production. In 1971, I joined the U. S. Navy, receiving a commission in November 1971. I completed the U. S. Navy Nuclear Power School training in November 1972, and U. S. Navy Submarine School training in February 1973. From February 1973 to August 1975, I served aboard the fleet ballistic missile submarine USS Ethan Allen (SSBN608). During this time, I was a qualified Engineering Officer of the Watch in a refueling overhaul, sea trials, and two deterrent patrols, during which I held the various jobs of Reactor Controls, Electrical, and Auxiliary Division Officer.

In September 1975, I joined TVA as a project engineer assigned to the Clinch River Breeder Reactor Project, responsible for contract management of various LMFBR system components. In

1977, I transferred to Watts Bar Nuclear Plant as a preoperational tests of various nuclear plant systems. In 1978, I transferred to TVA's Division of Power Production Reactor Engineering Section as a PWR licensing engineer responsible for coordination of division input into licensing efforts for Sequoyah, Watts Bar, and Bellefonte Nuclear Plants.

In 1980, I became supervisor of the Radiological Emergency Preparedness Section, Division of Nuclear Power, and presently hold that position. I am responsible for the radiological emergency preparedness program for all TVA nuclear plants.

STATEMENT OF QUALIFICATIONS

Truman W. Ball
Westinghouse Advanced Energy Systems Division
Madison, Pennsylvania

From 1979 to the present, I have served as Principal Engineer at Westinghouse AESD, Waltz Mill Site, with responsibility for the CRBRP Thermal Margin Beyond the Design Base analyses in the Safety and Licensing Group. This activity includes the calculation of the thermodynamic effects of a hypothetical core disruptive accident inside containment for the CRBRP.

I received a Bachelor of Arts degree in Physics from West Virginia University in 1954. From there, I attended the one-year certificate program at the Oak Ridge School of Reactor Technology as a full-time scholarship student.

Upon graduation from Oak Ridge, I joined Westinghouse as a scientist at the Bettis Atomic Power Laboratory in 1955. In 1959, I left Westinghouse for one year to accept a position at Holmes and Narver, Inc., as Project Scientist in the nuclear safety consulting field. I rejoined the Bettis Laboratory in 1960. There my position advanced to Manager, Operating Plants Performance Analysis, which included core physics analyses, thermal-hydraulic analyses, reactor protection analyses and nuclear safety analyses.

In 1976, I transferred to the (Westinghouse) Offshore Power Systems Company as Manager, Fluid Systems Analysis, where I

continued until transfer to AESD in 1979.

STATEMENT OF QUALIFICATIONS

David P. Weber
Manager, Accident Analysis Section
Reactor Analysis and Safety Division
Argonne National Laboratory
Argonne, Illinois 60439

I received a Bachelor of Science degree in Mathematics from Northern Illinois University in 1968, a Master of Science degree in Nuclear Engineering from the University of Illinois in 1970 and a Doctor of Philosophy in Nuclear Engineering from the University of Illinois in 1974.

Following graduation from Northern Illinois University in 1968, I joined the Division of Reactor Licensing of the Atomic Energy Commission as a technical intern in the Advanced Concepts Branch which had responsibility for advanced reactors and their applications, including liquid metal cooled fast breeder reactors (LMFBR). Under the USAEC technical intern program, I returned to the University of Illinois from 1969 to 1970 to pursue the MS degree in Nuclear Engineering.

From 1970 to 1974, I pursued a doctoral program in Nuclear Engineering. The coursework focus of this program was reactor physics and thermal hydraulics. My thesis topic was an experimental and analytical investigation of aerodynamic noise produced by round jets. This work included a one-year assignment during 1972-73 to the NASA Lewis Research Center. After returning to the University of Illinois and completing the doctoral thesis requirements, I was employed by the University of

Illinois as a research professor in the Nuclear Engineering Department until early 1974.

From 1974 to 1979, I was employed by Argonne National Laboratory in the Accident Analysis Section of the Reactor Analysis and Safety Division as a Research Nuclear Engineer. My principal technical activity was the development and application of a large scale computer code for the thermal, hydraulic, and neutronic analysis of the disassembly phase of hypothetical core disruptive accidents (HCDA) in LMFBRs. Additional activities included phenomenological, mathematical and computational model development for the transition and initiating phase of an HCDA.

From 1979 to the present, I have served as Manager of the Accident Analysis Section with responsibility for managing the development, verification and validation, and application of several large scale computer codes used in HCDA assessment. These codes include the SAS3D and SAS4A codes used in initiating phase analysis, the TRANSIT-HYDRO code used in transition phase analysis, the VENUS-II and FX2-VENUS-III codes used in disassembly phase analysis, and the SASSYS code used for LMFBR systems analysis.

I am a member of the American Nuclear Society.

STATEMENT OF QUALIFICATIONS

Robert J. Bowman
Principal Civil Engineer for Highways and Railroads
Tennessee Valley Authority
Knoxville, Tennessee 37902

From 1973 to the present, I have served as the Principal Civil Engineer responsible for the location and design of highways, railroads, channels, and site development associated with hydro, fossil, and nuclear plants of the Tennessee Valley Authority. I make the final technical decisions on the designs and analysis of all TVA transportation systems.

I received a Bachelor of Science degree in Civil Engineering from the University of Tennessee in 1961 and did graduate study in transportation at the University of Tennessee. I also received a diploma in Management from Lasalle Extension University.

I joined the Tennessee Valley Authority in 1961 as a Civil Design Engineer responsible for engineering work in the development of designs for highways, railroads, channels, and site development. I continued in that position until 1966 when I became a unit supervisor. In 1970, I was promoted to section supervisor responsible for design of highways, railroads, channels, and site development for comprehensive and complex engineering projects.

In 1971, I was appointed Staff Liaison Engineer responsible for planning, site development, highway and railroad design including negotiations and coordination with other Federal agencies, states, counties, municipalities, and railroads for all

TVA projects. I remained in that position until 1973 when I advanced into my present position.

I am a member of the American Society of Civil Engineers (ASCE), the American Railway Engineering Association (AREA), the National Management Association, Committee 9 (Highways) of AREA, ASCE Power Research Council, and Chairman of the Board of Editors of the "Tennessee Valley Engineer."

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of
UNITED STATES DEPARTMENT OF ENERGY
PROJECT MANAGEMENT CORPORATION
TENNESSEE VALLEY AUTHORITY
(Clinch River Breeder Reactor Plant)

Docket No. 50-537

AFFIDAVIT of H. Wayne Hibbitts, being duly sworn,
deposes and says as follows:

1. That he is employed as Chief, Safety and Environmental Branch, Public Safety Division, CRBRP Project, Box U, Oak Ridge, Tennessee 37830.
2. That he is duly authorized to answer Applicants' Updated Responses to Intervenors' Interrogatories.
3. That the above-mentioned and attached answers are true and correct to the best of his knowledge and belief.

H. Wayne Hibbitts
(Signature)

SUBSCRIBED and SWORN to before
me this 21 day of April, 1983.

Ruby L. Williams
(Notary Public)

Commission Expires April 23, 1984