

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

CONSUMERS POWER COMPANY

(Midland Plant, Units 1 and 2

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Docket Nos. 50-329 OM & OL
50-330 OM & OL

TESTIMONY OF DARL S. HOOD WITH RESPECT TO THE
QUALITY ASSURANCE PROGRAM IMPLEMENTATION PRIOR TO DECEMBER 6, 1979

Q. 1. Please state your name and position with the NRC.

A. My name is Darl S. Hood. I am a Senior Project Manager in the Division of Licensing, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission.

Q. 2. Have you prepared a statement of professional qualifications?

A. Yes. A copy of this statement is attached.

Q. 3. Please state the duration and nature of your responsibilities with respect to the Midland Plant, Units 1 and 2.

A. I am the Project Manager for the Midland Plant application for operating licenses. I have served in that position from August 29, 1977, when the application for operating licenses was tendered to the NRC for acceptance review, up to the present time.

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My responsibilities include management of the Staff's environmental and radiological safety reviews.

Q. 4. Please state the purpose of this testimony.

A. The purpose of this testimony is to demonstrate that if the Commission had known of the manner in which Consumers Power Company (hereafter CPC) was to implement its quality assurance program, it would have been warranted in not issuing the construction permits for the original application. See 10 CFR §50.100.

Q. 5. Please explain the relevance, if any, of 10 CFR §50.100 to the soil conditions at the Midland Plant?

A. The testimony of Eugene J. Gallagher together with the testimony of Joseph D. Kane, John William Gilray and James G. Keppler demonstrate that the activities related to and associated with the placement, compaction and control of backfill at the Midland site prior to December 6, 1979 were not implemented in accordance with either 10 CFR Part 50, Appendix B (Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants) or CPC's own quality assurance program. Had the Commission known at the time the original construction permits CPPR-81 and CPPR-82 for the Midland Plant were issued that these activities for areas supporting Category I structures and components would not be implemented in accordance with either 10 CFR Part 50, Appendix B or CPC's own quality assurance program, that knowledge would

have warranted the Commission to refuse to grant the original construction permits. In this connection, Appendix B requires applicants and licensees to establish and properly execute a quality assurance program. Proper execution or implementation of quality assurance is a cornerstone of any finding by the Commission of reasonable assurance that a proposed facility can be constructed and operated without undue risk to the health and safety of the public.

DARL S. HOOD

OFFICE OF NUCLEAR REACTOR REGULATION
U.S. NUCLEAR REGULATORY COMMISSION

PROFESSIONAL QUALIFICATIONS

I am a Senior Project Manager in the Division of Licensing, Office of Nuclear Reactor Regulation. I am responsible for managing licensing activities by the Commission with respect to Midland Plant, Units 1 and 2.

I have served in the position of Project Manager with the Commission since August 1976. This position provides for the managing of radiological safety reviews of applications for licenses and authorization to construct or operate light water nuclear power plants. As of April 1980, the position also provides for the managing of the environmental reviews of such applications. I assumed responsibility for Midland Plant, Units 1 and 2, when the application for operating licenses was tendered in August 1977. Other nuclear plants for which I have previously served in this capacity are the standardization design of Westinghouse which is designated RESAR-414 (Docket STN50-572), Catawaba Nuclear Station, Units 1 and 2 (Dockets 50-413 and 50-414), and River Bend Station, Units 1 and 2 (Dockets 50-458 and 50-459).

Between June 1969 and August 1976 I held two sequential positions within the Nuclear Power Systems Division of Combustion Engineering, Inc. (C-E) at Windsor, Connecticut. After March, 1973, I was Assistant Project Manager for the Duke Power Project. This position provided assistance in directing all efforts by C-E to design, fabricate, purchase and license the nuclear steam supply systems, reactor core, and associated auxiliary systems for Cherokee Units 1, 2 & 3 and Thomas L. Perkins Units 1, 2 & 3. The position assured that all aspects of the contracts were met and that safe and reliable systems were provided to the required schedule and at a reasonable profit to C-E. I assisted Duke Power in preparing the Preliminary Safety Analysis Report (PSAR) and provided for all C-E licensing support for these units. I also provided coordination of all other nuclear plants referencing the C-E Standard Safety Analysis Report to assure compatibility with C-E standard reference design. Until March, 1973, I was a Project Engineer in C-E's Safety and Licensing Department and was responsible for licensing of nuclear power plants. I coordinated the preparation of the Millstone Unit 2 PSAR and FSAR and the Calvert Cliffs Units 1 & 2 FSAR and interfaced with NRC, the utility, architect engineer and all C-E functional departments on licensing support matters. I ensured that NRC criteria, standards, and guides were incorporated into the nuclear steam supply system design.

Between August 1966 and June 1969, I was a Nuclear Safety and Radiation Analysis Engineer in the Nuclear Safety Unit, Nuclear Division of the Martin Marietta Corporation at Baltimore, Maryland. The purpose of this position was to perform hazard evaluations for nuclear power sources applied in space missions. My primary duty was to determine public exposure to radiation for malfunctions occurring during the intended mission. I also determined means by which the hazard potential for nuclear space systems could be mitigated to the extent that nuclear safety criteria were met. I conducted research with regards to the development of suitable criteria for permissible exposure levels and their probabilities, taking into account the dependence of acceptable risk on the benefit to be derived. My primary assignment was with the SNAP 29 (Systems for Nuclear Auxiliary Power) project. My evaluations of this nuclear power source included the formulation and application of computerized models for the transport of fuel released at high altitudes, in deep ocean and in shallow waters. I derived models for these release areas to incorporate the activity into human food chains and determined the expected ingestion dose, the number of people involved and the exposure probabilities. Inhalation dose was determined for radioactive fallout from the high-altitude release.

Between February 1965 and August 1966 I was a Nuclear Quality Control Engineer within the Electric Boat Division of General Dynamics at Groton, Connecticut. The purpose of this position was to provide control of quality for naval reactor systems, components, and shielding during the construction or overhaul of submarines by this shipyard. My primary area of responsibility was shielding. Duties included establishing procedures for the inspection of fabrication and installation of lead and polyethylene shielding, and resolving problems in complying with these or other shielding procedures. The position required a knowledge of nuclear theory, SSW systems design, Bureau of Ships contract and design requirements, non-destructive testing techniques, and quality control requirements.

Between November 1963 and February 1965, I was an Aeronautical Engineer for Nuclear Propulsion and Power at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration in Huntsville, Alabama. I performed investigations of the nature and magnitude of the nuclear radiation environment, shielding systems and safety systems associated with proposed nuclear space vehicles for candidate space missions.

Between November 1963 and college graduation in 1962, I held various positions including chief of a missile electronics training unit at Redstone Arsenal, Alabama; student at the U.S. Army Signal Officer's Orientation Course at Fort Gordon, Georgia; and Marine Engineer for ordnance and special weapons within the Design Division of the Norfolk Naval Shipyard, Portsmouth, Virginia.

I received a Bachelor of Science Degree in Nuclear Engineering from North Carolina State University in 1962. I am a member of the Health Physics Society.