

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

Before the Commission

'85 AUG 29 A11:45

In the Matter of

LOUISIANA POWER & LIGHT COMPANY)
)
(Waterford Steam Electric Station,)
Unit 3))

Docket No. 50-382 OL

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

AFFIDAVIT OF KENNETH W. COOK

The undersigned, being duly sworn, deposes and says:

My name is Kenneth W. Cook. My address is 142 Delaronde Street, New Orleans, Louisiana 70174. I am Nuclear Support & Licensing Manager for Louisiana Power & Light Company. In this position I am responsible for licensing activities for Waterford 3, interfacing with state and federal regulatory agencies and for providing technical support for the plant staff in the areas of Radiation Control, Nuclear Engineering, Fuels Management, Chemistry and Radiochemistry. A copy of my professional qualifications is attached.

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The purpose of this affidavit is to address the recent equipment "failures" discussed in the Joint Intervenors' Petition for Review⁽¹⁾ (JI Petition). I will address the incorrect statements in the petition and referenced news articles, describe the actual occurrences and the safety significance, if any, of the occurrences.

JI Petition at 7 refers to an event at Waterford on May 11, 1985. This event did not involve a faulty valve in the containment spray system as indicated in the petition. The Waterford 3 plant operators declared an unusual event due to a calculated unidentified leakage of ~6 gpm from the Reactor Coolant System. The source of this leakage was identified later that day as leakage from the packing glands on the pressurizer spray valves. The unusual event was declared as a conservative measure only in that the spray valve packing was not initially identified as the sole source of the leakage. Identification of the leakage to be from only this source allowed cancellation of the unusual event. The leakage was directed via a leakoff line to the containment sump. Despite the packing gland leakage, the spray valves were capable of performing their safety function at all times during the event. Excess leakage from the packing gland of this type of valve has been observed on other nuclear plants and corrected by modification of the packing gland arrangement. Waterford has applied this modification to the valves to improve their reliability. This event is considered to be typical of equipment performance problems which are expected to occur and be corrected under the Power Ascension Test Program and which could not be detected through the QA inspection process. It does not indicate a

(1) Joint Intervenors' Petition for Review, filed August 9, 1985

deficiency in, and is unrelated to, the reinspection and record review efforts which LP&L, the NRC Staff and the Appeal Board have relied upon to resolve the issues before the board.

Since the pressurizer spray valves were capable of performing their safety function, if called upon, and since all leakage from these valves was contained within the Reactor Containment Building, this event did not endanger the public safety.

JI Petition at 7 also discusses an event at Waterford 3 which occurred on May 8, 1985. While performing monthly surveillance on the turbine driven emergency feedwater pump, a loud noise was heard, which is believed to have resulted from a water hammer within the piping to the pump. A walkdown of the steam supply line resulted in identification of a number of supports which were apparently damaged during the event. These supports have since been repaired and the piping examined and determined to be acceptable. The turbine driven emergency feedwater pump did perform its function and successfully passed the monthly surveillance test in progress at the time of the event.

The cause of the water hammer was determined to be insufficient heating of the line to prevent accumulation of moisture/water. Changes have been made in the heat trace common alarm circuit to avoid masking of the Emergency Feedwater heat trace low temperature alarm and facilitate detection of heat tracing malfunctions and allow timely actions by the operators. The Power Ascension Test Program rather than the QA inspection process is the vehicle for identification and correction of equipment performance issues such as set point determination and resultant masking of alarms. The masking of the low temperature alarm does not indicate a

deficiency in, and is unrelated to, the reinspection and record review efforts upon which LP&L, the NRC Staff and the Appeal Board have relied to resolve the issues before the board.

Following the water hammer event, the steam driven emergency feedwater pump demonstrated its capabilities to perform its safety function. Additionally, redundant motor-driven emergency feedwater pumps were available throughout the event. Therefore, this event did not endanger the public safety.

JI Petition at 8 references a newspaper article apparently published on June 4, 1985, concerning the discovery of lead deposits in the "generator". The article presents a fairly accurate portrayal of the situation clearly, albeit not explicitly, referring to the electrical generator. The petition, however, incorrectly refers to deposits in the steam generator. The source of the lead carbonate deposits has been determined to be leaching of lead from the soldered fins in the generator hydrogen cooler. The deposits have been removed and the cooler cleaned as necessary. Additional hydrogen drying capacity has been installed to minimize moisture in the generator. The electrical generator is not a safety related component and as such does not fall under the 10 CFR Appendix B QA program which was the context of the JI motions to reopen. LP&L nevertheless has taken prudent precautions with the electrical generator in terms of maintenance and inspections. LP&L had inspected the generator internals in February of 1985 without evidence of lead carbonate deposits at that time. The decision to remove the deposits, as stated in the newspaper article, was a preventative measure to avoid more expensive and lengthy repairs which could result from continued operation. LP&L believes this to have been a prudent utility decision.

Since the electrical generator was not the subject of any issues raised by the JI Petition, this event does not indicate a deficiency in, and is unrelated to, the reinspection and record review efforts upon which LP&L, the NRC Staff and the Appeal Board have relied to resolve the issues before the board.

This situation did not involve a failure, but was a matter of performing preventative maintenance on a piece of equipment. Because the electrical generator is not a safety related component, the presence of lead carbonate does not have safety significance and the situation did not endanger the public safety.

JI Petition at 8 also references a newspaper article apparently published on July 23, 1985. This article discusses two separate events at Waterford 3. Both events involved the turbine-generator system which is not a safety related system and as such does not fall under the 10 CFR Appendix B QA program which was the context of the JI motions to reopen. In time sequence, the first event was a turbine trip caused by an electrical fault in the Digital Electro-Hydraulic Control Panel. The fault was due to an overheated resistor on a solid-state circuit board. To prevent reoccurrence, a different type of resistor with better heat dissipating capabilities has been installed on each circuit board within the panel which might have exhibited similar problems. The overheated resistor is considered to be a design deficiency (which the test program is intended to detect) and is not an indication of a deficiency in, and is unrelated to, the reinspection and record review efforts relied upon by LP&L, the NRC Staff and the Appeal Board in resolving the issues before the board.

The second event discussed in the July 23, 1985 newspaper article involved high vibrations in the turbine-generator system. The vibrations occurred while the plant was at 25% power and have been determined to have been caused by a connecting shaft device which couples the number 3 low pressure turbine rotor shaft to the turning gear. A metal plug in the coupling shaft was dislodged and threw the assembly out of balance, causing the high vibration. The plant was shut down and the turbine generator inspected for damage. The number 3 low pressure turbine rotor exhibited minor damage and a decision was made to replace the rotor with a spare rotor, stored on site. Repairs were also made on the exciter portion of the system. LP&L has followed the prudent course of action in shutting down the plant when the vibration occurred, performing a complete examination of potentially affected components and repairing or replacing components even when damage was minor. Since the turbine generator was not the subject of any of the issues associated with the JI Petition, this event does not indicate a deficiency in, and is unrelated to, the reinspection and record review efforts relied upon by LP&L, the NRC Staff and the Appeal Board in resolving the issues before the board.

Neither of the two events discussed in the referenced newspaper article involves failure of a safety related component or system. These events did not endanger the public safety.

Additionally, JI Petition at 3, via a footnote, addresses reactor trips associated with maintaining water level in the steam generators. The reactor trips in question have resulted from events in the secondary side, primarily the main feedwater pumps and main feedwater control

systems and the condensate polisher system. None of the initiating events involved systems which were the subject of the issues raised by the JI Petition and therefore do not indicate a deficiency in, and are unrelated to, the reinspection and record review efforts relied upon by LP&L, the NRC Staff and the Appeal Board to resolve the issues before the board. The events have been reviewed individually and collectively and are considered to be typical of the occurrences expected to occur and be resolved via the test program. Additionally, the number of events has been compared to other recently licensed nuclear plants and found to be consistent with their experience. LP&L has initiated corrective action, both on equipment and within procedures and modified training programs as necessary to minimize recurrence of these events.

In each of the reactor trip events discussed above, the trip occurred and proceeded as per the design. These events have demonstrated the reliability and capability of the systems required to shutdown the reactor and bring it to hot shutdown or cold shutdown, as appropriate. Therefore, these events did not endanger the public safety.

It should be noted that none of the events or situations noted by Joint Intervenors in their petition involve failure of any safety related systems to perform their function. In each case the event either did not require action by safety related systems or, when called upon, the safety systems fulfilled their safety functions.

I, Kenneth W. Cook, being duly sworn hereby depose and state that I have prepared and read the foregoing affidavit, and that it is true and correct to the best of my knowledge and belief.

Kenneth W. Cook
Kenneth W. Cook

Sworn to and subscribed before me this 21st day of August, 1985.

James Preston
Notary Public

My Commission expires: 11/1/86

Resume of
KENNETH W. COOK

EDUCATIONAL BACKGROUND

- o University of Wyoming
B.S. in Mechanical Engineering (with honors) -
Nuclear Option (1960-1964)
- o University of California, Berkeley
M.S. in Mechanical Engineering (1967-1968)
- o General Electric Advanced Engineering Courses (1965-1968)
- o Numerous General Electric Sponsored Management &
Engineering Courses & Seminars

PROFESSIONAL LICENSE

Registered Professional Nuclear Engineer - California

PROFESSIONAL LEVEL EXPERIENCE

LOUISIANA POWER & LIGHT COMPANY
(1983 - Present)

Nuclear Support & Licensing Manager (9/83 - Present)

Responsible for managing the LP&L Nuclear Licensing and Nuclear Support organizations which are responsible for licensing activities for Waterford 3, interfacing with state and federal regulatory agencies and for providing technical support to the plant staff in the areas of Radiation Control, Nuclear Engineering, Fuels Management, Chemistry and Radiochemistry.

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
(1980 - 1983)

Licensing Project Manager (4/80 - 9/83)

Licensing Manager for two nuclear power plants (one plant terminated in 1982); responsible for obtaining operating license and resolution of licensing issues with the NRC. Direct efforts of Architect/Engineer, Nuclear Steam Supply System (NSSS) vendor, Project Technical staff, Operations staff and outside consulting agencies in preparing submittals to NRC and other regulatory agencies. Develop licensing strategies, schedules, resource commitments and manage implementation of programs through licensing department staff.

GENERAL ELECTRIC COMPANY
(1964 - 1980)

Senior Licensing Engineer (6/79 - 3/80)

Program Manager for resolution of licensing issues associated with twenty-two (22) operating Boiling Water Reactors (BWR's). Responsibilities included development of licensing action plans, coordination of technical resolution and resolution of issues with NRC.

Senior Licensing Engineer (5/77 - 5/79)

Program Manager for generic licensing issues involving transient analyses for GE Boiling Water Reactors (BWR's). Programs included licensing of one-dimensional transient analysis model including development of licensing action plans, establishment of licensing basis, coordination of review with NRC and negotiation of licensing basis.

Senior Engineer (6/75 - 5/77)

Clinch River Breeder Reactor Project (CRBRP) cognizant engineer and program manager for safety of intermediate Heat Transport System (IHTS), Steam Generator Auxiliary Heat Removal System (SGAHRs), large sodium pumps and several analytical tasks including sodium fire, radiological and core disassembly analyses.

Engineer 1 (12/71 - 6/75)

Established safety design guidelines and performed safety conformance reviews for GE scope of supply on CRBRP. Coordinated GE input to CRBRP PSAR.

Directed safety analysis tasks relating to CRBRP Primary and Intermediate Systems sodium fires and structural evaluation of reactor vessel and internals during a core disassembly accident.

Performed studies of Radioactive Waste Management System and Containment System requirements, Refueling Accident Analysis Study, Refueling System Flow Chart and Safety Assurance Diagrams for the GE Demonstration Plant design.

Directed adaptation of Argonne National Laboratory developed REXCO computer code for use in GE evaluations of Hypothetical Core Disassembly Accident (HCDA) effects on the reactor internals and reactor vessel. Updated national LMFBR Program Plan in areas of Safety and Control Rod Assemblies.

Engineer 1 (1/73 - 9/73) Special Assignment

Provided consultation and performance of analytical tasks relating to new concept in Boiling Water Reactor containment design.

Engineer II (3/68 - 12/71)

Performed transient neutronic and thermal-hydraulic analyses in support of the SEFOR follow-on program and developed Design Safety Criteria for usage in the program. Developed an outline of Technical Specifications for the Demo Plant PSAR. Initiated and directed analysis of pipe break accidents within the primary system for the Demo Plant.

Developed a computer model for evaluation of the detailed fluid velocity distribution for interior and corner fuel pins in an LMFBFR fuel bundle.

Engineer (10/67 - 3/68)

Attended University of California at Berkeley as part of GE Advanced Engineering Course to obtain Masters Degree.

Engineer (6/64 - 10/67)

Developed detailed design, test plans and test operation plans for LMFBFR fuel assembly water flow tests. Developed LMFBFR test requirements for core fuel assembly thermal-hydraulics. Developed criteria and analytical models for evaluation of LMFBFR fuel pin spacer assemblies.

Performed core thermal-hydraulic evaluations and prepared fuel test specifications for Superheat Reactor test fuel under irradiation at the EVESR superheat reactor test facility.

Prepared Core Design and Plant Data Sheets for Boiling Water Reactor (BWR) proposals.

Developed experimental plans and designed test facilities and test section for BWR spacer pressure drops and feasibility study for UNISEAL for Superheat Reactor applications.

Reviewed design of BWR control rod drives and modified design to reduce cost of manufacture. Developed detailed cost breakdown of drive manufacturing process.

PHILLIPS PETROLEUM COMPANY
(1963)

Nuclear Engineer (6/62 - 9/63)

Participated in fuel Development Program for the Advanced Test Reactor. Set up corrosion test loop and monitored fuel test specimens.

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(Waterford Steam Electric Station,
Unit 3))

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BRANCH

CERTIFICATE OF SERVICE

This is to certify that copies of the foregoing "Licensee's
Answer In Opposition To Joint Intervenors' Petition For Review"
were served, by deposit in the United States mail, first class,
postage prepaid, to all those on the attached Service List, this
26th day of August, 1985.



Bruce W. Churchill, P.C.

Dated: August 26, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of)
)
LOUISIANA POWER & LIGHT)
COMPANY)
)
(Waterford Steam Electric)
Station, Unit 3))

Docket No. 50-382

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LP&L
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