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March 18, 1983

L.V. MAURIN
Vice President Nuclear Operations

W3P83-0684
3-A1.10

Director of Nuclear Reactor Regulation
Attention: Mr. G. W. Knighton, Chief
Licensing Branch Number 3
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Waterford Steam Electric Station - Unit Number 3
Docket Number 50-382
Request for a Forty Year Operating License

Dear Mr. Knighton:

The Construction Permit for Waterford Steam Electric Station - Unit Number 3 (Waterford 3) was issued on November 14, 1974. The plant is still under construction, slated for commercial operation in January, 1984, over nine years after the issuance of its Construction Permit. In light of the expense involved with this project and the elapsed time between the Construction Permit and expected Operating License issuance, Louisiana Power & Light Company (LP&L) is requesting that when issued, the Operating License for Waterford 3 be for a full forty year term from the date of issuance of the Operating License rather than forty years from the date of the Construction Permit, which until recently has been the practice of the Nuclear Regulatory Commission (NRC). If granted, this request would allow a minimum of 8.5 extra years of service from Waterford 3, providing an extra 1104 MW of generating capacity from the plant without additional capital costs associated with construction of new units.

Before making this request of the NRC, LP&L in conjunction with Ebasco Services, Inc. and Combustion Engineering, Inc., the architect/engineer and nuclear steam supply system (NSSS) vendor, respectively, for Waterford 3, reviewed both the Final Safety Analysis Report (FSAR) and Environmental Report - Operating License Stage (ER) to determine if there are any safety related or environmental issues which would preclude such a request. The result: operating Waterford 3 for forty years would not create any unreviewed safety or environmental questions, nor would it adversely affect plant operations in any way. More specifically, design bases in the FSAR typically assume forty years as the period over which the NSSS equipment could be expected to operate. For example, results of accelerated life tests on a prototype control element drive mechanism simulating forty years of operation indicated an acceptable degree of bearing wear.

Boo!

The design of the reactor vessel and its internals considered the effects of operation at design power and an 80 percent capacity factor for forty years and demonstrated that expected cumulative fluences are not a limiting consideration. Surveillance capsules have been included to provide checks of this expected fluence. Structures, systems, and components important to safety are designed to accommodate the effects of and to be compatible with the pressure, temperature, humidity, chemical, and radiation conditions associated with normal operation, maintenance, testing, and postulated accidents in the area in which they are located. In addition to being designed and constructed to maintain integrity throughout an anticipated forty year plant life, the Reactor Coolant System is configured in a manner which allows for accessibility and inservice inspection of systems and components.

Safety analyses performed to demonstrate the ability of emergency systems to mitigate the consequences of postulated accidents do not present a limitation to the request for a full forty year Operating License. In general, these analyses conservatively estimate equipment performance to be in a limiting direction, assume single failures of vital safety systems, and employ initial conditions which cover the expected range of plant operating parameters. Additionally, the equipment qualification programs for safety related equipment consider the effects of forty years of operation plus the design basis accident. Surveillance and replacement procedures will ensure that the objectives of the Environmental Qualification Program are met. Operability and availability of safety related equipment is also ensured by the Waterford 3 Technical Specifications. Safety margins established by the Technical Specifications are based on assumptions consistent with a forty year operating life.

The analyses presented in the ER characterize the plant environs so as to provide a baseline from which to postulate the effects of plant operation. Consequently, the majority of these analyses are applicable throughout the entire operational period and are not a function of the term of the license. Only the demographic projections and discussion of the need for power are time related. However, the need for power discussion presents system wide demands for power generated by Waterford 3 and projects load requirements for the early years of operation. Since this analysis investigates only the early years of station operation, it is unaffected by the term of the Operating License.

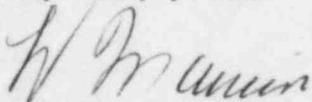
The demographic analysis contained in the ER is primarily utilized to determine population radiation doses for the life of the plant and for emergency planning purposes. The population is projected to the year 2030, which provides a population estimate six years beyond the expected end of plant life. It should be noted that the population estimates in the ER are based on 1970 U.S. Census data. Compared against the 1980 U.S. Census data, within a fifty mile radius of Waterford 3 parish population exceeded those presented in the ER by only 4.4 percent, which is not considered a significant difference. More importantly, it is the updated census information which was used in the preparation of the evacuation time estimate for the ten mile emergency planning zone population.

LP&L and NRC dose estimates for uncontrolled releases of radioactivity to the environment both use population projections for the year 2000, which would still be the approximate midpoint of plant life for a forty year term Operating License. Therefore this analysis is unaffected by the requested increase in length of the Operating License.

LP&L is requesting the issuance of the Waterford 3 Operating License for a full forty years of operation only after reviewing those areas pertinent to the public health and safety. Both Ebasco Services, Inc. and Combustion Engineering, Inc., for their respective scopes of services, support LP&L in this request. No unreviewed environmental or safety considerations related to the extra years of operation have been discerned, while there are significant economic benefits to the service and local communities in allowing the additional years of service.

Should you have any questions regarding this matter, please feel free to contact Ms. C. D. Groome of our Licensing Subgroup at (504) 363-8956.

Very truly yours,



L. V. Maurin

LVM/CDG/sd

cc: W. M. Stevenson, E. L. Blake, J. H. Wilson (NRC)