



Commonwealth Edison

One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

April 8, 1982



Mr. A. Schwencer, Chief
Licensing Branch #2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: LaSalle County Station Units 1 & 2
Additional Basis for Forty-Year
Operating License
NRC Docket Nos. 50-373 and 50-374

Reference (a): L. DelGeorge letter to H. R. Denton
dated September 23, 1981.

Dear Mr. Schwencer:

The purpose of this letter is to provide additional basis for issuance of a forty-year operating license for LaSalle County Station Units 1 and 2. Commonwealth Edison Company initially made this request in Reference (a). Recently (April 2, 1982), Mr. Purple requested that additional information be provided.

The following material is provided as justification for a 40-year operating license measured from the issuance of the operating license date rather than from the date of the construction permit. These ideas were garnered from the LaSalle design experience, Edison's nuclear generation experience, and a cursory appraisal of the major facets of potential LaSalle operational effects on public health and safety.

The planned life for LSCS Units 1 & 2 is forty years of commercial service on the Commonwealth Edison network. The siting, design and operations for LaSalle were all planned for that lifetime with conservative margin added to assure its accomplishment. In anticipation of long service life from nuclear generating stations Edison purchased and operates a uranium mine and milling subsidiary to retain the long-term economic advantage nuclear generation has over alternate power generation methods. For our new nuclear units, and our operating nuclear units, that economic advantage is expected to remain favorable and to endure over a period exceeding the forty-year life of LaSalle or the planned life of other new generating stations currently under construction.

Boo!
S.11

For LaSalle in particular, the siting and plant interface with the environment and the surrounding demography has significantly less dependence than earlier nuclear generating stations in the following aspects: independent cooling lake, single elevated effluent stack, integrated air handling for entire plant, benign seismicity, excellent hydrology with no flooding potential, favorable meteorology with few radiological threat pathways, isolation from industrial and transportation hazards, sparse and essentially non-changing demography. These siting factors were thoroughly evaluated and none was determined to be constraining for the 40-year operational life of the plant.

The facilities and plant structures along with their essential utility and transportation services were designed with margin for an objective 40-year lifetime of service. For example, the concrete primary containment structure was initially prestressed with a conservative margin for 40-years of service (although this is adjustable enroute); the corrosion allowance on piping, tanks, valve and pump bodies, etc. was conservatively established for 40 years service and measured in the preservice inspection to verify that minimum thicknesses met ASME code requirements; the power generation equipment and the safety equipment were analyzed for stress margins on the basis of service pressures and temperatures corresponding to operational profiles while in service. The plants internal shielding and the equipment accessibility routes were designed for a full 40-year service life on the basis of prior experience with similar BWR power plants; the radwaste facility was designed to accommodate end-of-cycle conditions over a plant operating life of 40 years.

The structural design basis includes thermal, hydrodynamic, seismic, and other combined loads on plant equipment, including associated anchors and mountings, etc. including 40 years of cyclic effects plus margin. Both the BOP equipment and the NSSS equipment acknowledged the thermohydraulic and radiological inputs for a 40 year service life. The reactor pressure vessels for these BWR's are not lifetime constrained by neutron fluence. Fatigue appraisals of key in-reactor structures: grid plates, jet pump beams, fuel channels, for instance, were evaluated against the postulated worst load conditions representative of 40 year's service life and were found to have adequate margins. Both the seismic (SQRT) and environmental qualification programs for safety related equipment have utilized the 40-year service life as the desired goal. Test conditions and qualification profiles represent this same basis. Appraisals of life limited equipment have resulted in surveillance and maintenance requirements to maintain the qualification objectives throughout the plant lifetime. Operability tests to certify the availability of safety equipment for operations (LCO's) are a part of the plant Tech Specs. Safety margins established by the Tech Spec setpoints acknowledge the original 40-year design capability of pressure boundary equipment with respect to performance profiles while in service. Again, the context of operational safety includes the entire 40-year design life of the plant. Even though operational procedures may change enroute, their basis is the Tech Spec and the engineering design of the plant as analyzed in the FSAR. The operational term of that basis is 40-years from initial heatup.

April 8, 1982

The combination of conservative design, extensive performance evaluations during preoperational and startup tests to validate the design, plus surveillance and maintenance practices enable Edison to confidently expect 40-years of operational service from LaSalle. Of all domestic BWR's, the Quad Cities Unit 2 had the highest availability during calendar year 1981. A Dresden unit had essentially the same availability. These facts attest the credibility of Edison's expectation for LaSalle which incorporates improved design features and makes use of earlier Edison experience. With continuing modification programs, the older units are expected to be upgraded for years. With LaSalle as a compartmentalized plant (physically and electrically separated redundant safety divisions) future modifications for upgrading are expected to be somewhat easier to incorporate into the plant; however, because it has current state-of-art equipment, its operation is not expected to challenge any safety limits nor compromise any 40-year life design parameters.

If there are any further questions in this matter, please contact this office.

Very truly yours,

CW Schroeder 4/9/82

C. W. Schroeder
Nuclear Licensing Administrator

lm

cc: NRC Resident Inspector - LSCS

3848N