

PETITION TO DISMISS

October 23, 2001

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

COMMISSIONERS:

Richard A. Meserve, Chairman
Greta Joy Dicus
Edward McGaffigan, Jr.
Jeffrey S. Merrifield

In the Matter of

DUKE ENERGY CORPORATION
(Docket Nos. 50-369, 50-370, 50-413,
and 50-414)
McGuire Nuclear Station, Units 1 and 2
Catawba Nuclear Station, Units 1 and 2

**BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE
PETITION TO DISMISS LICENSING PROCEEDING
OR, IN THE ALTERNATIVE, HOLD IT IN ABEYANCE**

I. INTRODUCTION AND SUMMARY

Blue Ridge Environmental Defense League (BREDL) respectfully petitions the Nuclear Regulatory Commission (“NRC”, or “Commission”) dismiss this proceeding for a 20-year renewal of Duke Energy’s (Licensee) existing 40-year Facility Operating Licenses (FOL) for Catawba 1 and 2 and McGuire 1 and 2 Nuclear Power Stations. The proceeding should be dismissed on the grounds that:

1. The Staff apparently intends to prepare and issue an Environmental Impact Statement (EIS) for license renewal without assessing the impacts to reactor aging and accident consequences from utilizing plutonium reactor fuel during the present license period that is outside of the existing operating and design basis of all four reactors. The staff is taking this approach in spite of the facts that:

- a. the licensee has expressed its commitment to submit a license amendment to use plutonium/mixed oxide (MOX) fuel derived from excess U.S. military plutonium.
 - b. The licensee is contractually obligated with the U.S. Department of Energy (DOE) to obtain said license amendment before 2007.
 - c. There is substantial public opposition in adjacent reactor communities to the use of plutonium/MOX fuel in Catawba and/or McGuire.
2. The exemption to 10CFR54.17 that NRC granted to the licensee on October 8, 1999¹ and which allowed the licensee to submit a license renewal application before 20 years of operation in Catawba 1, Catawba 2, and McGuire 2 was based on invalid statements by the licensee regarding its aging management program.
3. Major changes in security and safeguard requirements at all Nuclear Power Plants (NPP) are inevitable in the aftermath of the September 11, 2001 terrorist attacks in New York City and Washington, D.C.. Although the economic and environmental impacts of these changes must be understood for all relicensing efforts, McGuire and Catawba NPP's are particularly vulnerable to acts of sabotage because of their meager, three-foot thick concrete containment structures. In addition, a subsidiary of the licensee is weakening security by actively developing the former buffer zones around both McGuire and Catawba NPPs.

The NRC cannot claim to have taken the “hard look” at environmental impacts that is required by the National Environmental Policy Act (“NEPA”), *see Natural Resources Defense Council v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972), if it fails to make the fundamental safety

¹ 54924 **Federal Register** / Vol. 64, No. 195 / Friday, October 8, 1999 / Notices of 1999 .

determination of whether a proposed nuclear facility poses undue risk to public health and safety, and whether the security risks of operating centralized energy sources that can function as radiological weaponry can be justified.

Therefore, BREDL respectfully petitions the Commission to dismiss this licensing proceeding, without prejudice to Duke's ability to file a complete license application at some later date. In the alternative, BREDL requests the Commission to hold the proceeding in abeyance until decisions are made regarding major changes to the license bases, i.e. the use of plutonium/MOX fuel, the completion of 20 years of operation of Catawba 1; changes in design basis threats and other security issues; and a decision on the Facility License Operator.

II. BACKGROUND

On June 13, 2001 the licensee submitted an application to the Commission to renew the operating licenses for its McGuire Nuclear Station, Units 1 and 2, and the Catawba Nuclear Station, Units 1 and 2. The notice of receipt of application was published in the Federal Register on July 16, 2001.² The licensee proposes to add twenty years to the existing 40-year operating licenses, thus running all four facilities up to 60 years, or until between 2041 for the oldest unit (McGuire 1) to 2046 for the newest unit (Catawba 2).

On August 15, 2001, the staff of the Nuclear Regulatory Commission issued a *Notice of Acceptance for Docketing of the Application and Notice of Opportunity for a Hearing pertaining to the Application*,³ declaring that the application had been accepted for docketing, and announcing an opportunity for a hearing with the following scope:

² 66 Fed. Reg. 37072 (2001). *66 Fed. Reg. 13,794*

³ See 65 Fed. Reg. 60693 (2001).

“In accordance with 10 CFR 54.29, the NRC will issue a renewed license on the basis of its review if it finds that actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified as requiring aging management review, and (2) time-limited aging analyses that have been identified as requiring review, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis (CLB) and that any changes made are in appropriate order. In the event that no request for a hearing or petition for leave to intervene is filed by the above date, the NRC may, upon completion of its evaluations and upon making the findings required under 10 CFR parts 54 and 51, renew the licenses without further notice. As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding and how that interest may be affected by the results of the proceeding, taking into consideration the limited scope of matters that may be considered pursuant to 10 CFR parts 54 and 51.”

On September 14, 2001, BREDL filed a petition to intervene and request for hearing in accordance with 10 C.F.R. § 2.714.

On October 1, 2001, the NRC staff responded to the petition, concluding that *“BREDL has established standing to intervene in this license renewal proceeding through at least one of its members for both sites, by means of the affidavits of its members that authorize BREDL to petition for intervention. The affidavits and BREDL™s Petition establish proximity to the reactor sites and raise concerns regarding the off-site consequences of aging. In addition, BREDL has stated at least one aspect within the scope of the proceeding...BREDL has established standing as to both McGuire and Catawba. “*

On October 4, 2001, the Commission issued CLI-01-20, *ORDER REFERRING PETITIONS FOR INTERVENTION AND REQUESTS FOR HEARING TO THE ATOMIC SAFETY AND LICENSING BOARD PANEL*, which referred those petitions to intervene and requests for hearing to the Chief Administrative Judge of the Atomic Safety and Licensing Board (ASLB).

III. Bases for Motion to Dismiss

A. The license renewal application is fundamentally deficient because the use of plutonium/MOX fuel from converted military plutonium is not proposed for analysis. Because the actual proposed action is misidentified and erroneous, the actual Safety of Operations is not proposed for analysis.

1. The Applicant wrote that the proposed license renewal “*assumes throughout that licensed activities are now conducted, and will continue to be conducted, in accordance with the facilities’ current licensing bases (e.g. use of low enriched uranium fuel only).*”⁴ This assumption is erroneous and inaccurate.
2. The **real proposed action** is a continuation of operations in accordance with the current licensing bases *until* the use of plutonium/MOX fuel use begins in 2007 and ends between 2021-2027.⁵ As a partner in a consortium known as Duke Cogema Stone and Webster (DCS), The licensee is contractually obligated to the U.S. Department of Energy

⁴ Application to Renew the Operating Licenses of Catawba Nuclear Stations 1,2 and McGuire Nuclear Stations 1,2. June 13, 2001. (Application). Page 4.

⁵ Duke Cogema Stone and Webster. *Mixed Oxide Fuel Fabrication Environmental Report*. Docket Number 070-03098.

(DOE) to provide analysis and licensing services for activities)⁶ that are outside of the current licensing bases, specifically:

- a. Design and Licensing of the Mixed Oxide Fuel Fabrication Facility.
- b. Design and Licensing of a new plutonium MOX fuel storage and shipping container;

c. Design and Licensing of modifications to Catawba and McGuire Nuclear Stations to irradiate Plutonium/Mixed Oxide (MOX) Fuel in up to 40% of each reactor from 2007 to 2024 and possibly beyond.

3. Page 4 of the license renewal application contains the following statements of intent:

“One potential future change to the current licensing basis involves the use of mixed oxide (MOX) fuel at McGuire and Catawba...Duke is currently evaluating and planning for the use of MOX fuel in batch quantities (up to 40% core fractions) in its McGuire and Catawba Reactors...Duke is planning to submit, later this year, a license amendment request to allow a limited number of MOX fuel assemblies. Use of those MOX fuel assemblies would begin no earlier than 2003...The current schedule calls for the submittal in late 2003 or early 2004 of license amendments to allow the use of MOX fuel in batch quantities, with such use beginning no earlier than 2007.”

4. There is overwhelming public support for a review of the use of plutonium/MOX fuel prior to or in conjunction with relicensing. During the NRC’s own scoping meetings for two separate NEPA processes—the MOX FFF EIS and the McGuire Relicensing EIS—the only advocates of a segmented approach to analyzing plutonium/MOX fuel was the applicant/licensee.

⁶ Contract No. DE-ACO2-99CH10888. March 17, 1999. At this time the applicant is only under contractual obligations described as the “base contract,” which pertain primarily to design and licensing activities.” DOE has

The NRC Staff's decision to allow the licensee to apply for an amendment to irradiate plutonium/MOX fuel concurrently with the license renewal process violates NEPA because it is based on the Staff's unlawful intention to issue an EIS without evaluating the question of the impacts of plutonium/MOX fuel use on reactor operations, accident source terms, nonproliferation, and increased aging impacts. Since under 10CFR54.31 "a renewed license will become effective immediately upon its issuance, thereby superseding the operating license previously in effect," the licensee is circumventing the Commission's rules by attempting to establish a Licensing Basis for the renewed license that excludes the actual licensing basis being considered.

This process also circumvents NEPA by analyzing the aging impacts under the Current Licensing Basis (CLB) at a time when there is a known potential and stated desire to change the CLB. Proper NEPA implementation requires a conservative approach that analyzes the potential to use plutonium/MOX fuel in Catawba and McGuire NPPs, not an approach that at best skates along the borders of the law.

The weakening effect of the NRC's splintered approach to reviewing the license application is readily apparent. Under §54.29, *Standards for issuance of a renewed license*, "a renewed license may be issued by the Commission up to the full term [up to 60 years] authorized by §54.31 if the Commission finds that:

- (a) "Actions have been identified and have been or will be taken with respect to the matters identified in Paragraphs (a)(1) and (a)(2) of this section, such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted

the authority to award, without competitive bidding, additional portions of the contract pertaining to physical construction and operation of the MFFF and plutonium MOX fuel irradiation.

in accordance with the CLB, and that any changes made to the plant's CLB in order to comply with this paragraph are in accord with the Act and the Commission's regulations”

Without the benefit of details about a licensing basis involving the use of up to 6% plutonium-239 in lieu of Low Enriched Uranium (LEU) fuel with an initial plutonium content of zero, it is difficult to fully assess the manner in which use of plutonium/MOX fuel may affect reactor aging, the consequences of severe accidents with a more dangerous source term, the identification of additional accident sequences. As a result, it is difficult to determine whether the facilities in question are adequately designed to protect against natural phenomena and accident consequences of the probable CLB.

With respect to the operation of nuclear facilities, the health and environmental impacts of greatest concern are the radiological impacts incurred during normal operations and accidents. These impacts are controlled chiefly through the imposition of regulatory limits on the design and operation of the facilities. If an EIS lacks sufficient information to reach a conclusion regarding an applicant's compliance with the “no undue risk” standard, *i.e.*, the applicant's compliance with NRC regulations for protection of the public from radiological hazards, then it lacks a fundamental basis for any assessment of environmental impacts under NEPA. Yet, this is exactly what the NRC Staff proposes to do, by issuing an EIS before it has had analyzed the impacts of using fuel that is outside of the current licensing basis at Catawba and McGuire.

B. The exemption to 10CFR54.17 that NRC granted to the licensee on October 8, 1999⁷ and which allowed the licensee to submit a license renewal application before 20 years of operation in Catawba 1, Catawba 2, and McGuire 2 was based on invalid statements by the licensee regarding its aging management program.

⁷ 54924 Federal Register / Vol. 64, No. 195 / Friday, October 8, 1999 / Notices of 1999 .

1. On October 8, 1999 the NRC granted the licensee an exemption to 50CFR.17.c., thus allowing the licensee to submit a license renewal application earlier than the 20 years before the expiration of the operating license currently in effect.⁸
2. Part of the basis for the exemption, which was requested on June 22, 1999, was the licensee's assertion of a "regular and systematic exchanges of information on plant-specific operating experience among all three Duke nuclear stations." At least two instances can be found where this statement is in error:
 - a. The licensee failed to act independently upon the fact that "the initiation and growth of significant circumferential cracks in PWR Alloy 600 weldments, *apparently at growth rates that are faster than previously modeled,*" (emphasis added) were discovered at Oconee Nuclear Station, Unit 3 in early 2001.⁹ The licensee's models were inadequate to predict this aging problem, which was not discovered by the licensee within the confines of its Aging Management Program for Oconee Nuclear Station. This situation is one of many that illustrate what David Lochbaum of the Union of Concerned Scientists stated about aging failures that "indicate, beyond a reasonable doubt, that the aging management programs [in support of relicensing] are

8. Federal Register. Vol 64. No 195. Friday October 8, 1999. 54924-54925. The licensee was already under contract to the Department of Energy to use MOX fuel, but this issue was left unaddressed in the Federal Register notice.

⁹ April 17, 2001 Letter from Brian W. Sheron, NRC Associate Director for Project Licensing and Technical Analysis, Office of Nuclear Reactor Regulation; to Mr. Alex Marion, Nuclear Energy Institute. Subject: *Issues to be Addressed in a Generic Justification for Continued Operation of PWRs.*

inadequate because they are not preventing equipment failures.”¹⁰ The NRC subsequently issued NRC Bulletin 2001-01: *Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles*. The licensee addressed the issue only in response to the Bulletin.¹¹

b. In 1998, the NRC’s Allegation Review Board found that “problems with D.C. Cook Ice Condenser Containment such as configuration and testing, and Ice Basket Bay Doors and Components were known but not reported by D.C. Cook, Watts Bar, McGuire, and Westinghouse.”¹² Although the ARB classified the concern as “low” significance, it also illustrated a failure to exchange “information on plant-specific operating experience among all three Duke nuclear stations” in order to correct safety problems; and also implies by omission that McGuire personnel did not share this information with Catawba personnel.

Aging issues like the one encountered at Oconee Nuclear Station--yet not identified through the Oconee Aging Management program nor during the Oconee relicensing-- indicate that exemptions to the relicensing process, particularly for this licensee, are in appropriate at this time.

¹⁰ May 8, 2001 Testimony of David Lochbaum before the Clean Air, Wetlands, Private Property, and Nuclear Safety Subcommittee of the U.S. Senate Committee on Environment and Public Works.

¹¹ August 31, 2001 Duke Energy letter to the NRC responding to NRC Bulletin 2001-01 for Catawba and McGuire.

¹² June 22, 1998 Memorandum from Oscar De Miranda, NRC Region II Senior Allegations Coordinator, to Jean Lea, Senior Allegations Coordinator of Office of Nuclear Reactor Regulation. Subject: Tennessee Valley Authority, American Electric Power and Duke Power Ice Condensers—Region II Review of DOL Transcripts. Released by NRC in response to FOIA 2001-0010.

C. Major changes to the future security and safeguard requirements at NPPs are inevitable in wake of the September 11, 2001 terrorist attacks; and the breadth, depth, and associated costs and economic impacts of these changes will impact the relicensing analysis and therefore must be known before further action is taken.

1. BREDL respectfully submits that, in the wake of the tragic and unprecedented terrorist attack of September 11, 2001 on the World Center and the Pentagon, it is now clear that the magnitude of the terrorist threat against U.S. infrastructure is substantially greater than previously assumed; that additional such attacks are foreseeable; and that the nation's fleet of nuclear reactors and fuel cycle facilities are highly vulnerable because they were not designed to withstand attacks of such severity.
2. The NRC's drastic shutdown of its website on October 11, 2001 was an admission of this contention: *"In the aftermath of the terrorist attacks of September 11, 2001, the Nuclear Regulatory Commission(in support of its mission to ensure adequate protection of the public health and safety, promote the common defense and security, and protect the environment in the civilian use of nuclear fuels and materials) is limiting the availability and access to certain information regarding licensed activities. Accordingly, some information and documents, previously posted on the web or available through the Agencywide Documents Access and Management System (ADAMS), the Bibliographic Retrieval System (BRS) , or the NRC Public Document Room (PDR), may not be accessible to the public at this time by these means. "*¹³

¹³ <http://www.nrc.gov> 10/11/01, 6:15 p.m. EDT. Continued through 10/16/01. As of this filing, the NRC website is only providing minimal information.

3. The U.S. Coast Guard has recognized the threat by imposing security zones adjacent to all Nuclear Power Plants situated along the Great Lakes. (Fed Register, 10/12/01, 9/27/01).

4. Even prior to September 11, 2001, radiological sabotage experts have recommended a more thorough and comprehensive approach to analyzing attacks upon nuclear power plants. According to one expert at Sandia National Laboratory,

"Potential for Sabotage. In response to the number and type of documented incidents, and in combination with evolving threat capabilities, the International Atomic Energy Agency (IAEA) has recently issued Revision 4 of INFCIRC225 with a new section devoted to sabotage [2]. Assuming that an adequate armed response is available, facilities adhering to IAEA recommendations for current physical protection systems should be able to detect and neutralize both armed attacks and attempts to smuggle bombs into inner areas. However, there are other types of sabotage, which have not been discussed to which these facilities may be vulnerable. The evolving threat now includes armed suicide attacks, vehicle bombs, high-technology military explosives, homemade man-portable explosive devices, and chemical/biological capabilities."

"It is recommended that sabotage categories, target types, and consequences be revised, and a standardized analysis and risk assessment methodology be developed for this area of physical protection at NPPs. Many agencies and organizations worldwide use risk assessment methodologies which may be applicable to this problem. Uniform risk

*assessment techniques, in combination with recommended physical protection upgrades, can only lead to a safer world for us all."*¹⁴

The NRC's "Design Basis Threat" of a handful of attackers who may or may not have explosives and a vehicle is an example of the understated threat cited in this report, and hopelessly minimizes the threat of radiological and industrial sabotage. The Commission must invoke its equally important role of "protecting the common security" as grounds to dismiss this proceeding. Given the ongoing terrorist threat, it is also clear that the NRC's longstanding refusal to consider the consequences of such attacks in its Environmental Impact Statements ("EIS's") must be reversed.

5. Congress has introduced legislation to strengthen nuclear security that will reverse current NRC standards.

Legislation introduced in the U.S. House of Representatives to amend the Antiterrorism and Effective Death Penalty Act of 1996 includes "strengthen[ing] security at certain nuclear facilities." Section 304 of HR 3016¹⁵ would mandate:

The Nuclear Regulatory Commission shall conduct a study to assess the vulnerability of nuclear facilities certified by the Nuclear Regulatory Commission to potential terrorist attacks. The study shall include--

- (1) an assessment of the design basis threat;*
- (2) an assessment of potential vulnerability of various classes of such facilities;*
- (3) an identification of important protection measures for both the near term and long term;*
- (4) an assessment of physical, cyber, biochemical, and other terrorist threats; and*

¹⁴ "Sabotage at Nuclear Power Plants" SAND1850C by James Purvis. 1999. Sandia National Laboratory. <http://www.osti.gov/bridge/search.easy.jsp>

¹⁵ 107th CONGRESS. 1st Session. H. R. 3016. [Report No. 107-231, Part I]. Introduced by Tauzin (LA) and Dingell (MI) on 10/3/01.

(5) recommendations for additional studies, research and development, testing, and protections required to address the threats identified.

An initial report identifying immediate concerns and protection measures shall be transmitted to the Congress not later than 90 days after the date of the enactment of this Act. A final report on the study shall be transmitted to the Congress not later than 270 days after the date of the enactment of this Act.”

Section 305 of the same bill would amend Chapter 14 of the Atomic Energy Act of 1954 (42 U.S.C. 2201-2210b) and require a new design basis security threat:

“The Nuclear Regulatory Commission, not later than 60 days after the date of the enactment of this section, after consultation with the Secretary of Defense, the Director of Central Intelligence, the Director of the Federal Bureau of Investigation, the National Security Advisor, the Director of Homeland Security (or any successor official), and any other appropriate Federal, State, or nongovernmental entities, shall commence a rulemaking to consider changes to the design basis threat for facilities licensed by the Commission under this Act. Within 1 year after the date of the enactment of this section, the Commission shall issue a final rule revising the design basis threat and associated regulations.”

b. Regulations issued under this section shall take into account--

- \(1) the events of September 11, 2001;*
- \(2) the potential for attack on facilities by multiple coordinated teams totaling in the aggregate at least 20 individuals;*
- \(3) the potential for assistance in an attack from several persons employed at the facility;*
- \(4) the potential for suicide attacks;*
- \(5) water-based and air-based threats;*
- \(6) the potential use of explosive devices of considerable size and other modern weaponry;*
- \(7) the potential for attacks by persons with a sophisticated knowledge of facility operations;*
- \(8) the threat of fires, especially fires of long duration; and*
- \(9) protection of spent fuel storage pools and dry cask storage, including after reactor closure.*

`c. Regulations issued under this section shall establish requirements for licensees relating to construction, operation, security procedures, and emergency response, and shall require conforming amendments to existing licenses.

`d. Regulations issued under this section shall require armed escorts for all spent fuel shipments, capable of repelling attacks by a large number of attackers working as several coordinated teams and using sophisticated techniques and equipment.

`e. (1) Regulations issued under this section shall include the establishment of an Operational Safeguards Response Evaluation program, whose Director shall report directly to the Nuclear Regulatory Commission, which shall ensure that the operational safeguards response of each facility described in paragraph (2) is tested at least once every 2 years to determine whether the design basis threat factors identified in regulations issued under this section have been adequately addressed.

(2) Facilities subject to testing under paragraph (1) include commercial nuclear powerplants, research reactors, spent fuel storage facilities and associated support facilities and equipment, and any other licensed facility the Nuclear Regulatory Commission considers appropriate.

III. Summary

The continuation of the litigation under the current schedule and circumstances would be prejudicial to BREDL and other intervenors and wasteful of their resources. Not only is the Staff's segmentation of this proceeding illegal as a matter of law, but the piecemeal nature of the applicant and staff's approach makes it impossible to perform a complete or effective evaluation of the issues that are within the scope of the current hearing. In fact, it is impossible to make a meaningful evaluation of nuclear plant aging and economic issues without access to the broader context of a complete license application, a realistic approach to plant aging that addresses the lessons learned from the past few years, and a recognition that increased security measures will undoubtedly impact the financial viability of nuclear energy.

BREDL and other intervenors are therefore severely handicapped in their ability to participate in this proceeding in a meaningful way. Moreover, this piecemeal litigation is wasteful of Intervenors' time and resources, because they must spend a great deal of time guessing at information that should have been provided by the licensee. In addition, issues raised

now may change later because changes to the security infrastructure will result in substantial economic impacts regarding the role of nuclear energy.

For the foregoing reasons, the Commission should dismiss this proceeding. In the alternative, it should hold the proceeding in abeyance pending the submission of a complete license application and the completion of changes to the security requirements at NPP's.

Respectfully submitted,

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