

SUBJECT: SAFEGUARDS EVALUATION REPORT (SER), FOR THE VOGTLE ELECTRIC GENERATING PLANT UNITS 3 AND 4 COMBINED LICENSE APPLICATION (TAC RN0265)

## **BACKGROUND**

The Fuel Cycle and Transportation Security Branch (FCTSB) were asked to participate in the application process by the Southern Nuclear Operating Company (SNC) for the Vogtle Electric Generating Plants Units 3 & 4 Combined License application. Specifically, FCTSB was requested to provide input into the issue of the applicant's desire to bring special nuclear fuel (SNM) in the form of new fuel assemblies, on-site before the Protected Area (PA) was declared operational in accordance with 10 CFR 73.55(a). Additionally, FCTSB was requested to review and provide requests for additional information, as required, on the Part 70 Physical Security Plan (PSP) which was submitted as annex E to the Part 73.55 VEGP PSP.

On February 3, 2011, a meeting was held with NRC staff to discuss the part 70 security requirements. There were no decisions made on a path forward.

On February 14, 2011, a meeting was held with NRC staff to discuss the part 70 security requirements as they applied to part 52 license applicants.

On February 16, 2011, a meeting was held at NRC HQ between NRC staff and the applicant to discuss a path forward on the part 70 security requirements and other licensing issues not related to security.

On March 9, 2011, an unclassified conference call was held between the NRC staff and the applicant to discuss questions the applicant had about the RAIs.

On March 10, 2011, a meeting was held at the NRC HQ between the NRC staff and the applicant to discuss the RAIs and RAI responses.

On March 16, 2011, the unclassified RAIs were provided to the applicant.

On March 16, 2011, the applicant provided a formal response to the RAIs. The response was dated March 16, 2011. (ND-11-0494)

On March 17, 2011, the applicant provided revision 0, to the PSP, dated March 14, 2011, which included the RAI responses applicable to the PSP.

## **REGULATION**

### **Fixed Site Security:**

Title 10 of the *Code of Federal Regulations* (10 CFR) 73.67, fixed site and in-transit requirements for the physical protection of special nuclear material of moderate and low strategic significance.

## **REGULATORY GUIDANCE**

Regulatory Guide (RG) 5.59, "Standard Format and Content for a Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance" (1983)

NRC Regulatory Issue Summary 2005-22, "Requirements for the Physical Protection During Transportation of Special Nuclear Material of Moderate and Low Strategic Significance: 10 CFR Part 73 vs. Regulatory Guide 5.59 (1983)" (2005)

### **ACTION REQUESTED**

The Office of New Reactors (NRO) requested that NSIR staff

1. Review the request submitted by Southern Nuclear Operating Company ;
2. Determine if there are major deficiencies that make the submittal unacceptable for detailed review and prepare a recommendation to accept or deny (if required).
3. Prepare RAIs;
4. Evaluate additional information submitted, participate in meetings, conference calls, and site visits, if necessary; and
5. Prepare input for the Safeguards Evaluation Report.

### **DISCUSSION**

In accordance with 10 CFR 73.55(a)(4), current applicants for an operating license under 10 CFR part 50, or combined license under 10 CFR part 52 who have submitted their applications to the Commission prior to the effective date of this rule must amend their applications to include security plans consistent with this section. (10 CFR 73.55)

The Commission worded §73.55(a)(4) to require implementation of §73.55 "before fuel is allowed onsite (protected area)." The Commission explained this provision as follows:

This paragraph establishes when an applicant's physical protection program must be implemented. The receipt of special nuclear material (SNM) in the form of fuel assemblies onsite, (*i.e.*, within the licensee's protected area) is the event that subjects a licensee or applicant to the requirements of this rule, and it is the responsibility of the applicant or licensee to complete the preliminary and preparatory actions required to implement an effective physical protection program at the time SNM is received onsite (within the protected area). 74 Fed. Reg. 13926, 13960 (Mar. 27, 2009)

Further guidance is provided in the form of Regulatory Guides (RGs) to support implementation of this Rule. The following guidance is provided in RG 5.76:

(U) Except for mixed-oxide (MOX) fuel assemblies, the Commission requirements of 10 CFR 73.67, "Licensee Fixed Site and In-Transit Requirements for the Physical Protection of Special Nuclear Material of Moderate and Low Strategic Significance," apply and must be met until fuel assemblies are received inside an operational protected area. Consistent with 10 CFR 73.55(a)(4), applicants for an operating license under the provisions of 10 CFR Part 50, or holders of a COL under the provisions of 10 CFR Part 52, shall implement the requirements of 10 CFR 73.55 before special nuclear material (SNM) in the form of fuel assemblies are allowed on site (in the protected area).

An acceptable method to meet this requirements is for licensees to determine when the protected area meets the requirements of 10 CFR 73.55(e)(8). When this is accomplished and the protected area has been declared operational, the requirements of 73.55(a)(4) apply.

Southern Nuclear Operating Company requested that they be authorized to bring new fuel on-site prior to the protected areas (PA) for the Vogtle Electric Generating Plants Units 3 & 4 were declared operational.

Several meetings were held between NSIR and NRO staff to discuss the appropriate way to meet this request. Since this application was to be used as a template for other part 52 combined operator's license applications, a process was needed to provide an efficient and effective way to ensure that the applicant's shall establish and maintain or make arrangements for a physical protection system which will have as its objective to provide high assurance that activities involving special nuclear material are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety in accordance with 10 CFR 73.20.

As a result of these meetings it was determined that: a) the applicant would provide a physical security plan in accordance with 10 CFR 73.67(f)(g), b) the PSP would be in the form of an annex to the part 52 PSP, c) once the PA was declared operational IAW part 73.55(a)(4), that the annex would no longer be required and could be removed IAW part 50.54(p), (see comments) and, d) that the Interim Compensatory Measures Orders (ICMO) that were issued to Category III Fuel Cycle Facilities subject to part 73.67 would also apply to part 52 applicants that requested to have fuel on-site prior to the activation of the PA. The ICMOs were written into the RAIs instead of being provided as information prior to the receipt of the license and being issued once the license was granted.

In the RAI responses (RAI-08), the applicant addressed the Order imposing fingerprinting and criminal history records check requirements for unescorted access to radioactive material or other property dated April 30, 2007. (EA-07-086) In accordance with section 5.4 of the PSP annex, the applicant committed to utilizing the access authorization program as outlined in section 14.1 of the PSP. The access authorization program in section 14.1 is in accordance with 10 CFR 73.56, "Personnel Access Authorization Requirements for Nuclear Power Plants," based on implementing guidance as provided by Regulatory Guide 5.66, Revision 1 and Section 652 of the Energy Policy Act of 2005 (EPAct).

The applicant conducted a critical target area analysis (CTA) in response to RAI-09, and determined that a CTA would not exist. With no CTA, sections A and B of the Interim Compensatory Measures Order (ICMO) for Category III Fuel Cycle Facilities would not apply. The applicant adequately addressed the requirements of section C and D of the Order as follows:

9.C.1. The information requested in response to this RAI is provided in Section 5.10 of the SNMPPP description.

9.C.2. The information requested in response to this RAI is provided in Section 5.10 of the SNMPPP description.

9.D.1. The applicant has determined that this question is not applicable, because there will be no UF6 within the CAA at this nuclear reactor plant site.

9.D.2. Section 5.9 of the SNMPPP is revised to address storage of hazardous material in relation to the CAA at this nuclear reactor plant site.

9.D.3. The applicant has determined that this question is not applicable, because uranium process operations are not performed within the CAA at this nuclear reactor plant site.

9.D.4. Section 5.6 of the SNMPPP addresses communication capabilities that will be used for protection of the CAA. Additionally, there are no computer systems needed for protection of the CAA; therefore, no vulnerability evaluation is warranted.

9.D.5. Fire suppression capabilities will be provided by the installed fire protection system, as discussed in SNMPPP Section 5.3, and supplemented by an existing on-site firefighting capability. Local fire department coordination will be consistent with existing agreements.

9.D.6. Offsite medical support and communication links regarding availability of emergency resources in the event of a terrorist attack will be provided in accordance with existing agreements with appropriate emergency response agencies.

9.D.7. The applicant has an SGI program in effect and will apply the requirements of this program to the design information and plant layout drawings related to the CAA in accordance with the requirements of 10 CFR 73.21 and 10 CFR 2.390. The SNMPPP will be maintained as SGI.

In response to RAI-11, the applicant stated that, "The SNMPPP will be in effect for the period beginning prior to receipt of SNM and ending prior to fuel load. As stated in FSAR 12.2.1.1.10, no uranium hexafluoride (UF6) will be received, possessed, or used during this period. Furthermore, the applicant has no plans to process UF6 at the plant site at any time following the Commission's 10 CFR 52.103(g) finding, and consequently does not expect the requested 10 CFR Part 40 license to include receipt, storage, or use of UF6 at the nuclear power plant site. Should these plans change the applicant would request to amend the Part 40 license in accordance with applicable regulations, and would expect to address UF6 storage, transportation, and use if requested at that time."

## **CONCLUSIONS**

The U.S. Nuclear Regulatory Commission (NRC) Staff's review of the applicant's Physical Security Plan (PSP) for the protection of Special Nuclear Materials (SNM) of Low Strategic Significance (LSS) contains information that has been marked as "Safeguards Information" by the applicant, pursuant to 10 CFR 2.390. NRC staff reviewed the applicant's PSP for fixed site physical protection of SNM-LSS and chemicals of concern. The methods and procedures outlined in the PSP satisfy the performance objectives, systems capabilities, and reporting requirements specified in 10 CFR 73.67. The PSP for the facility is acceptable and provides reasonable assurance that the requirements for the physical protection of SNM-LSS and chemicals of concern will be met.

The staff concludes that Revision 0 dated March 14, 2011, as revised by RAI responses, is acceptable and recommends approval.

**COMMENTS:**

The above SER's conclusion only applies as long as the annex to the PSP is in effect. However, without changes to the part 73.55 based PSP, when the annex is removed these are two long term issues that will need to be addressed:

1) Part of the PSP contains the requirements for transportation security IAW part 73.67(g). The transportation security plan (TSP) must address the security requirements for shipping and receiving SNM. Once the applicant receives a license and meets the requirements of part 73.67, they can receive SNM in the form of new fuel assemblies. They will receive this fuel under the auspices of part 73.67(g)(2). On occasion they may have to ship damaged fuel rods or fuel assemblies back to the manufacturer. When this happens they must follow the requirements of part 73.67(g)(1). If this occurs during the initial fuel load and the part 73.67 PSP is still annexed to the primary PSP the licensee would have a regulatory basis and authority to receive and ship SNM. However, if the annex is removed then the licensee would not have the basis to receive and ship SNM for subsequent fuel assemblies.

2) The current license allows for 1,000Kg of UF6. UF6 falls under Part 40 but the security requirements (lacking in part 40) are addressed in part 73 and the ICMO that were issued to CAT III fuel cycle facilities. The aspects of the Order and UF6 were adequately addressed in the RAI responses and the annex PSP. The applicant stated that they would not have UF6 within the CAA and would comply with part 40 if they brought it on-site in the future. But that is written in the non-binding RAI response document. However, once the annex PSP is removed there will be no trigger to the Part 40 and 73.67 if the licensee decides to bring UF6 on-site at a later date.

**PRINCIPAL CONTRIBUTOR(S)**

Barry L. Wray