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NEF-09-00201-NRC

October 16, 2009

R. William Borchardt  
Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
One White Flint North  
Washington DC 20555-0001

Louisiana Energy Services, LLC  
National Enrichment Facility  
NRC Docket No. 70-3103

Subject: At Risk Construction

Dear Mr. Borchardt:

On June 2, 2009, the Nuclear Regulatory Commission ("NRC") made available a draft Regulatory Guide (DG-3037) for public comment entitled, *Guidance for Fuel Cycle Facility Change Processes*. This Regulatory Guide generally addresses the 10 C.F.R. § 70.72 change process. Prior to its publication, members of the fuel cycle industry had been working closely with the NRC on this guidance document as part of the Nuclear Energy Institute's Enrichment Regulatory Framework Task Force. However, there was never any discussion of modifying the Regulatory Guide to address "at risk" construction. This issue seems to have come up within the last several months in relation to certain license amendments submitted by Louisiana Energy Services, LLC ("LES") and now, as LES understands it from informal contacts with the NRC, the plan is to include language in the final Regulatory Guide that prohibits at risk construction until a license amendment has been finally approved.

As discussed in more detail in the attached briefing paper, LES does not believe at risk construction is prohibited under NRC's regulations and, in fact, is (and has been) a course of conduct historically supported by NRC precedent. Therefore, LES is writing to encourage the NRC to carefully evaluate any position that it may be considering for announcement that at risk construction is strictly prohibited while a license amendment is being reviewed by the NRC staff. Given the scheduling and financial challenges with constructing any complex nuclear facility in today's business environment, be it a uranium enrichment or nuclear power plant, a policy prohibiting at risk construction would be severely detrimental to the success of such projects.

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Add: R. Jervay (raj)

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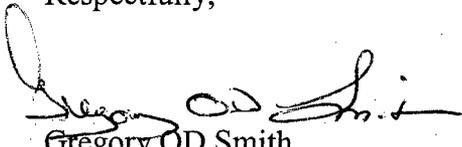
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RULES AND DECISIONS  
ENRICHMENT  
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FRAMEWORK

Given the regulatory, policy and precedent implications of a new position prohibiting at risk construction, LES respectfully asks that any plans to change existing policy be fully vetted with industry before being announced in final form, especially through a guidance document. The attached briefing paper is intended to help inform the NRC's consideration of this matter. LES stands ready to discuss this matter should NRC find that necessary and appropriate. The stakes for the nuclear industry are high concerning this matter and, as a consequence, LES does not believe that this issue can (or should) be marginalized, even if inadvertent. Thus, we respectfully ask for your prompt attention to and action on this matter.

We look forward to your response and engagement on this important matter.

Respectfully,

A handwritten signature in black ink, appearing to read "Gregory OD Smith". The signature is fluid and cursive, with a large initial "G" and "S".

Gregory OD Smith  
Chief Operating Officer and Chief Nuclear Officer

# Acceptability of “At Risk” Construction at Louisiana Energy Services’ National Enrichment Facility

October 16, 2009

## INTRODUCTION

Louisiana Energy Services, LLC (“LES”) understands that the Nuclear Regulatory Commission (“NRC”) staff is developing new guidance that may limit the ability of Part 70 licensees to initiate design changes in the field during construction of an NRC-licensed facility without first obtaining NRC approval. As explained below, LES believes that current NRC regulations and guidance appropriately permit licensees to initiate changes during the construction process in accordance with the licensee’s design control and configuration management programs, but require final implementation to be based on any necessary NRC approval of the change. For this reason, LES believes that the potential new Staff guidance is contrary to existing NRC regulations and practice, and urges the NRC not to impose new guidance that would hinder the ability of Part 70 – as well as Part 52 -- licensees to carry out construction of new facilities in a timely and efficient manner.

## BACKGROUND

In connection with construction of the National Enrichment Facility (“NEF”), LES has engaged in value engineering to evaluate certain aspects of the facility design and identify changes that could add efficiencies to the construction process. As a result of this process, LES concluded that design changes to certain structures were warranted. LES has processed these changes in accordance with the change control process set forth in 10 C.F.R. § 70.72 and LES’s design control and configuration management programs. As required under Section 70.72, LES has sought license amendments for certain of those changes.<sup>1/</sup>

To move forward with prompt construction of the NEF, under some circumstances LES has permitted construction to proceed at risk. “At risk” construction is where construction of facilities or fabrication of components in the field begins before a design change has been formally approved by the NRC. Controls are established to prevent operational implementation of the changes until the appropriate reviews have been completed and the appropriate NRC approval obtained. The approach is considered to be “at risk” since it is possible that during the review or approval process the design change could be disapproved or revised even though partial construction or fabrication has already occurred, with the result that the licensee would have to redo the construction or fabrication.

In discussions with LES, the NRC staff has suggested that such an approach may not be consistent with applicable NRC regulations and the NEF license. LES respectfully disagrees and

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<sup>1/</sup> For example, on October 2, 2007, LES submitted a license amendment request to modify certain safety factors used in structural design analyses.

sets forth below its analysis of why LES's "at risk" construction approach is fully consistent with applicable requirements.

## ANALYSIS

### *NRC Regulations Permit Licensees To Initiate Changes During Construction*

The license for the NEF requires the facility to be constructed in accordance with the requirements of the license, but allows changes to be initiated during construction pursuant to 10 C.F.R. § 70.72. Condition 10 of the NEF license provides in this regard:

the licensee shall conduct authorized activities at the NEF in accordance with the statements, representations, and conditions, or as revised in accordance with Section 19 of the Quality Assurance Program Description, . . . 10 C.F.R. 70.32, . . . [or] 10 C.F.R. 70.72 . . . in [the LES application for license, Safety Analysis Report ("SAR"), as revised, and related licensing basis documents].<sup>2/</sup>

General descriptions of the proposed NEF facility, including structures such as the Centrifuge Assembly Building, were provided in LES's license application and SAR.

Section 70.72 provides a process by which the licensee may make changes during both construction and operation, and specifies criteria for determining when changes require prior NRC approval through a license amendment. Specifically, Section 70.72(b) provides in relevant part:

Any change to site, structures, processes, systems, equipment, components, computer programs, and activities of personnel must be evaluated by the licensee as specified in paragraph (a) of this section, before the change is implemented. The evaluation of the change must determine, before the change is implemented, if an amendment to the license is required to be submitted in accordance with § 70.34.

If the change does not require prior NRC approval, the licensee may implement the change after the required evaluation and submit to the NRC an annual summary of changes and any necessary revisions to the integrated safety analysis summary. For changes requiring prior NRC approval, the licensee must apply for and receive an amendment to the facility license. Any changes made, including those that do not require NRC pre-approval, are subject to inspection by the NRC. During the NEF construction process, NRC construction inspections have focused on facility changes and the NEF design control and configuration management processes. See, e.g., Inspection Report No. 70-3103/2009-002, dated June 26, 2009, Enclosure at 10-11.

Based on the terms of Section 70.72, the process does not appear to preclude a licensee from initiating changes in the field at risk, even though final operational implementation is pending a required amendment. Rather the process appears flexible enough to permit a licensee to move

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<sup>2/</sup> SNM-2010, issued June 23, 2006, at Condition 10.

forward with construction by initiating field implementation of changes at its own risk, consistent with its NRC-approved design control and configuration management programs, while the NRC reviews any necessary amendment request. So long as the licensee has performed the requisite evaluation under Section 70.72 and established controls to prevent final implementation of the change until all regulatory requirements are met and approvals received, there should be no technical or safety issue with proceeding with the construction activities at the licensee's risk .

This is supported by the fact that, once the licensee has substantially completed the uranium enrichment facility, it must go through another step at the pre-operational review stage. Specifically, prior to commencement of operation, the NRC is required to verify through inspection that the facility has been constructed in accordance with the requirements of the license. This verification process is mandated by Section 193(c) of the Atomic Energy Act ("AEA"), which provides in relevant part:

Prior to commencement of operation of a uranium enrichment facility licensed hereunder, the Commission shall verify through inspection that the facility has been constructed in accordance with the requirements of the license for construction and operation.

This requirement is codified in the NRC regulations at 10 C.F.R. § 40.41(g) and 10 C.F.R. § 70.32(k). Section 70.32(k) provides that

No person may commence operation of a uranium enrichment facility until the Commission verifies through inspection that the facility has been constructed in accordance with the requirements of the license. The Commission shall publish notice of the inspection results in the Federal Register. <sup>3/</sup>

Thus, before operation may begin, the NRC must approve the final design of the facility and the as-built construction in order for the NRC to render a decision that the facility has been constructed in accordance with the license. This verification process is conducted as part of the NRC's Operational Readiness Review (ORR) inspection program. As indicated in NRC Inspection Manual Chapter 2696, *Louisiana Energy Services Gas Centrifuge Facility Construction and Pre-Operational Readiness Review Inspection Programs* (Oct. 19, 2006) at 2696-01 and 2696-06.02, "the Commission must verify that the facility was constructed in accordance with the requirements of the license" and "[t]he inspections will also verify that as-built construction meets the approved design."

Accordingly, instead of prescribing rigid design change timeline requirements for construction, the regulatory scheme established by the NRC contemplates that as long as final validation by the agency supports that the facility was constructed in accordance with the license requirements, an approach to facilitating construction such as the at risk approach used by LES is not prohibited. LES recognizes that NRC inspections, including the ORR, cannot verify 100% of

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<sup>3/</sup> A review of the legislative history of AEA § 193(c) and the rulemaking record for 10 C.F.R. § 70.32(k) does not reveal any discussion indicating that the at risk construction approach would not be permissible.

construction activities at a facility as complex as a uranium enrichment facility. However, LES coordinates closely with the NRC on the construction schedule in order to facilitate the NRC's ability to inspect key activities. As Inspection Manual Chapter 2696 (at section 05) states, "To the extent practicable, the construction and pre-operational inspections should be coordinated with the licensee to ensure that key construction activities are in accordance with the site construction project schedule." Throughout the construction process, the NRC has authority to inspect construction activities at any time and take enforcement action if necessary to ensure public health and safety.<sup>4/</sup> The NRC also has the ability to assign a resident inspector to the site to monitor day-to-day activities during construction on an ongoing basis, which the NRC has not considered necessary for the NEF.

NRC precedent for enrichment facilities supports the view that at risk construction is consistent with the NRC's regulatory scheme. In connection with the licensing of USEC's American Centrifuge Plant (ACP), the NRC explained how the regulatory processes under Sections 70.72 and 70.32(k) work together:

Once a license is granted . . . construction of the facility may begin. In accordance with 10 C.F.R. 70.72(d)(2), the applicant (then licensee) will submit to the NRC annual updates to the Integrated Safety Analysis Summary along with a brief summary of the changes made during the year. . . The NRC will review these submissions as well as any license amendment requests that may be submitted.

Although the applicant (then licensee) can start construction following issuance of the license, it may not begin operation of the enrichment facility until after it successfully completes a second step. Prior to operation, the Commission must verify through inspection that the facility has been constructed in accordance with the requirements of the license (see 10 C.F.R. 70.32(k)). <sup>5/</sup>

The NRC staff described the processes in detail during the ACP licensing proceeding (emphasis added):

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<sup>4/</sup> As the NRC staff explained in the MOX fuel facility licensing proceeding:

the NRC recently licensed two uranium enrichment facilities. We gave them both authority to start construction and to begin operations before they even overturned a single spade of dirt . . . for those facilities, if they make changes during the construction process, they will have to go through the 70.72 change process. That process -- even if they don't come in with a license amendment application, their books are open to us, we go in, we look at their documentation of the 70.72 change process. If they're not following it correctly, we'll take enforcement action. If they do find that any changes are significant enough to trigger a license amendment, we'll then review that license amendment application.

*Shaw AREVA MOX Services, LLC (Mixed Oxide Fuel Fabrication Facility Possession and Use License)*, Tr. at 117-118 (Aug. 22, 2007).

<sup>5/</sup> Safety Evaluation Report for the USEC American Centrifuge Plant (September 2006) at page xvii.

For uranium enrichment facilities, to ensure that an applicant's programs have been sufficiently implemented and commitments have been properly applied in the final facility design and in the constructed facility, the regulations in 10 C.F.R. § 40.41(g) and 10 C.F.R. § 70.32(k) state that:

No person may commence operation of a uranium enrichment facility until the Commission verifies through inspection that the facility has been constructed in accordance with the requirements of the license.

This requirement, applied through operational readiness review inspections rather than through licensing reviews, will ensure that the programmatic and functional-level commitments made by the licensee, as well as any license conditions imposed by the Board, are properly applied in an as-built facility. Inspections, therefore, are intended to focus on the final design of the facility and the procedures that have been prepared to implement the licensee's commitments that are reflected in the license.

In the development of the performance requirements in 10 C.F.R. Part 70 it was anticipated that, in the future, changes will likely be made to corresponding operation facility design and processes. A methodology for addressing these changes is described in 10 C.F.R. § 70.72. For a uranium enrichment facility, the licensee may make changes to its design after receiving its license during the construction phase or after operations begin under the provisions of 10 C.F.R. § 70.72. 6/

In its Initial Decision in the ACP licensing proceeding, the Atomic Safety and Licensing Board observed that "10 CFR § 70.32(k) provides for a pre-operation inspection in which the NRC Staff will address any changes or additions to equipment or procedures and ensure that all tie-down provisions have been satisfied." *USEC Inc. (American Centrifuge Plant)*, 65 NRC 429, 447 n. 62 (2007) (emphasis added). Accordingly, the NRC has previously recognized that a licensee may initiate changes pursuant to Section 70.72, and that the ORR inspection conducted pursuant to Section 70.32(k) will address any changes in order for the NRC to make a decision on whether the facility was constructed in accordance with the license.

The inspection requirement under section 70.32(k) is generally analogous to the Inspections, Test, Analyses, and Acceptance Criteria ("ITAAC") requirements for Part 52 combined licenses ("COL"). In that regard, Section 70.32(k) is similar to Section 52.99, which pertains to inspections during construction. As provided in Section 52.99(b):

With respect to activities subject to an ITAAC, an applicant for a combined license may proceed at its own risk with design and procurement activities, and a licensee may proceed at its own risk

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6/ *USEC Inc. (American Centrifuge Plant)*, NRC Staff Response to Atomic Safety and Licensing Board Order of February 6, 2007 (Feb. 20, 2007) at 27.

with design, procurement, construction, and pre-operational activities, even though the NRC may not have found that any one of the prescribed acceptance criteria have been met.

Thus, the NRC recognizes that a licensee under a Part 52 COL may proceed with construction at its own risk prior to an ITAAC verification. Because the purpose of a Section 70.32(k) ORR inspection is essentially the same as the ITAAC verification process, i.e., to find reasonable assurance that the plant as constructed meets the applicable NRC requirements for operation, a Part 70 licensee should be allowed similar flexibility as a Part 52 COL licensee to proceed with construction at its own risk.

### ***Related NRC Precedent Recognizes At Risk Construction***

In addition to the clear support under the regulations and AEA § 193(c) for the at risk construction approach, this approach is consistent with NRC precedent under Part 50 for plants under construction as well as operating plants. The NRC has long recognized that construction is “at risk” in the development of nuclear facilities, since the NRC may ultimately decide not to authorize operation after the facility has been completed. *See, e.g., Cleveland Elec. Illuminating Co., et al.* (Perry Nuclear Power Station, Unit 2), DD-84-23, 20 NRC 1549, 1154 n. 2 (1984) (“[i]t should be noted that in construction of a facility, a licensee proceeds at its own risk”); *Power Reactor Development Co. v. International Union of Electrical Radio and Machine Workers*, 267 U.S. 396, 415 (1961); *Porter Country Chapter of the Izaak Walter League, Inc. v. NRC*, 606 F.2d 1363, 1370 (D.C. Cir. 1979); *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 172 (1978).

The NRC has also found that a Part 70 licensee may proceed with construction “at risk.” In *Nuclear Fuel Services, Inc.* (Erwin, Tennessee), the Commission denied a request to enjoin Nuclear Fuel Service’s construction activities for the expansion of its facility pending NRC review of certain license amendment requests. CLI-03-03, 57 NRC 239, 248 (2003). In its decision, the Commission acknowledged that the NRC’s regulations and statutes do not “prohibit outright [the licensee’s] construction activities” and that the licensee “proceeds at its own risk with construction activities.” *Id.* at 247. 8/

For operating plants, the NRC has also recognized that field implementation of changes may be initiated in parallel with required reviews. For example, a 2004 inspection report for the Kewaunee nuclear plant refers to design change documentation not being fully completed prior to “work commencing in the field.” The report did not identify this process as an issue, much

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8/ The NRC has also apparently recognized the “at risk” construction concept in the Part 40 context as well. In a letter from the NRC to the Texas Commission on Environmental Quality (“TCEQ”), the NRC recommended language to TCEQ’s proposed Agreement State regulations, which paralleled Section 40.32(e) of the NRC’s regulations, acknowledging “that proceeding at the applicant’s own risk includes a responsibility to remediate any areas impacted by major construction activities if the license is not issued.” Letter from Robert J. Lewis (NRC) to Susan Jablonski (TCEQ), Accession No. ML073520006, dated December 18, 2007.

less cite the licensee for a violation.<sup>7/</sup> Similarly, during the restart process for the Davis-Besse nuclear plant, the transcript of a May 6, 2003 meeting between FirstEnergy (the licensee) and NRC indicates that the “at risk” construction approach is a generally accepted industry practice (although the NRC did show sensitivity concerning how such an approach is implemented).<sup>8/</sup>

Additional support appears in NRC Inspection Procedure 60853, *Onsite Fabrication of Components and Construction of an ISFSI*,<sup>9/</sup> dated February 11, 2004, which provides the following guidance to inspectors:

Determine the adequacy of the timing of design change reviews. Ideally the licensee or CoC holder should complete the reviews before the component is fabricated. However, if the licensee elects to proceed with fabrication “at risk,” verify that the licensee does not use the DCSS [dry cask storage system] until all design changes have been evaluated and appropriately dispositioned.

The ISFSI Inspection Procedure is particularly relevant because licenses for ISFSIs, in particular site-specific licenses, effectively authorize the licensee to construct/fabricate and operate the facilities. This is validated by the applicable Standard Review Plan, which directs reviewers at multiple points to evaluate both operational and construction related aspects of the license application.<sup>10/</sup> Thus, when a specific ISFSI license is issued, it is essentially a COL-type of license. In addition, similar to the discussion above, Section 72.146(c) allows ISFSI licensees to make design changes, including field changes, as long as they are subject to “design control measures commensurate with those applied to the original design.” The term “commensurate with” indicates the NRC’s intent not to rigidly limit such changes, but rather to assure that any process of design and/or field change control is equal or superior to the design control measures approved by the NRC under the license. If an ISFSI licensee’s design control and configuration management procedures are sufficiently flexible to allow at risk construction, then such an approach may be utilized consistent with the licensee’s Quality Assurance program.

Based on the extensive precedent where the NRC has recognized the at risk construction principle, an NRC position precluding or restricting the use of this approach would represent a change in the agency’s interpretation of applicable requirements. Such a new or changed position should only be imposed prospectively through a notice and comment rulemaking process that provides for input by all affected licensees. Further, the NRC must provide a

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<sup>7/</sup> The use of “at risk” construction involved a modification to the safety injection pump lube oil cooler. The NRC’s Inspection Report (05000305/2004003) concluded as to this matter that “[n]o findings of significance were identified.” Kewaunee Inspection Report at 8.

<sup>8/</sup> See Official Transcript of May 6, 2003 public meeting between NRC and FirstEnergy staff to discuss 0350 Panel issues, at 46-47.

<sup>9/</sup> The acronym ISFSI stands for Independent Spent Fuel Storage Installation. Such installations are licensed pursuant to 10 C.F.R. Part 72.

<sup>10/</sup> Standard Review Plan for Spent Fuel Dry Storage Facilities (NUREG-1567), dated March 2000.

“reasoned analysis” as required by sound principles of administrative law. *Rust v. Sullivan*, 500 U.S. 173, 187 (finding that an agency justified its change of interpretation with a “reasoned analysis”). If the NRC does not provide support for a new approach, then a departure from precedent is “arbitrary and capricious.” *First City Bank v. National Credit Union Admin. Bd.*, 111 F.3d 433, 442 (1997); *Atchison, Topeka & Santa Fe Railway Co. v. Wichita Board of Trade*, 412 U.S. 800, 808 (“[w]hatever the ground for the departure from prior norms, however, it must be clearly set forth so that the reviewing court may understand the basis of the agency's action and so may judge the consistency of that action with the agency's mandate.”).

Moreover, a new or changed Staff position interpreting the regulations would constitute a backfit as defined under 10 C.F.R. § 70.76(a)(1). Accordingly, the Staff should evaluate the backfitting implications of any new or changed position in this area. A review against the cost-benefit and other standards of Section 70.76 should be undertaken before adopting any new regulatory guidance.

### ***The NRC Staff Position Would Raise Significant Policy Considerations***

A new Staff position in this area would also raise serious policy issues. Restricting a licensee's ability to proceed with construction at risk could result in delaying or even halting construction activities during the license amendment review process and any potential hearing that may ensue. This result would present a significant policy issue for all licensees, including Part 52 COL holders. It would impose a burden on licensees during the construction process without any commensurate benefit to safety. Licensees could face significant delays in construction of new facilities that are urgently needed when properly initiating changes at risk prior to the NRC completing any required review would not raise any technical or safety issues.

### **CONCLUSION**

The overriding requirement under Section 193 of the AEA and the relevant implementing regulations of 10 C.F.R. § 70.32(k) and § 70.72 is that, prior to commencement of operation of the enrichment facility, the NRC must find that construction has been completed in accordance with the requirements of the license. Thus, the at risk construction approach, when implemented consistent with a licensee's NRC-approved design control and configuration management program, is fully compatible with this regulatory scheme. At all times, the NRC continues to have the power (1) to disapprove any required license amendment request; (2) to inspect construction and all facility changes at any time; (3) to take enforcement action, including halting construction, at any point if necessary for public health and safety; and (4) to deny authorization for the licensee to commence operation of the plant. Thus, at no point is the NRC's ability to control the construction and operation of the facility in question. Given the potential harm to licensees of having to wait until final NRC approval before initiating certain design changes in the field, LES believes that the NRC should affirm that the principle of at risk construction applies to uranium enrichment facilities.