



DUKE COGEMA  
STONE & WEBSTER

Annette Vietti-Cook, Secretary of the Commission  
US Nuclear Regulatory Commission  
Attention: Rulemakings and Adjudications Staff  
Washington, DC 20555-0001

13 October 1999  
PSH-99-001

SUBJECT: Comments on Proposed Rule 10 CFR Part 70, *Domestic Licensing of Special Nuclear Material; Possession of a Critical Mass of Special Nuclear Material* [64 FR 41338, 30 July 1999]

Dear Ms. Vietti-Cook:

Duke Cogema Stone & Webster, LLC (DCS), the contractor and prospective licensee responsible for the design, construction, and operation of the US Department of Energy's Mixed-Oxide (MOX) Fuel Fabrication Facility, offers the enclosed comments to the proposed revision to 10 CFR 70, in response to the NRC's request for public comment.

We note that the Nuclear Energy Institute (NEI), on behalf of the nuclear fuel cycle industry, is submitting comments separately. DCS is a member of NEI, and acknowledges and endorses NEI's comments. The enclosed recommendations are *in addition to*, and not in lieu of, NEI's comments.

While DCS is a new participant in these proceedings, the interactions we have observed to date in the development of this proposed rule have been encouraging, and we find the vast majority of the proposed changes to be positive and productive. Our comments primarily propose clarifications or minor changes to ensure consistency throughout the rule. We also propose elimination of the plutonium-specific provisions deleted in an earlier draft of the proposed change, as we believe they are redundant to – and in some ways contrary to – other proposed changes.

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We look forward to continued interaction in the development of this rule change, the ongoing work on a generic Standard Review Plan (i.e., NUREG-1520), and a MOX-specific SRP. If I can provide any additional information, please do not hesitate to contact me.

Sincerely,



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### **Items Relied on For Safety (§70.4, §70.64)**

DCS notes that NEI has commented, with regard to §70.64(a)(8), that the use of “item relied on for safety” (IROFS) is problematic in the context of design, inspection, and maintenance, owing to the definition of IROFS including “activities of personnel” (§70.4). DCS shares this concern and proposes that changing the definition in §70.4 to limit IROFS to “structures, systems, equipment, and components” would ameliorate this concern. It is reasonably straightforward to classify physical items as being relied upon for safety, and to apply graded QA controls, including management measures, to design, construction, operation, maintenance, etc., of those physical items, based on their respective safety functions. It can be confusing to try and classify and grade items when they include “personnel activities,” since an activity has little importance absent the context of its influence on a physical item’s safety function. Removing “personnel activities” from the definition of IROFS would not limit their importance, but rather would put activities in context with the structures, systems, equipment, or components to which they are related, without necessitating a change in the balance of the proposed rule.

Doing so will also help address the concern raised by NEI with regard to §70.65(b)(6), where they recommend that IROFS listed in the ISA Summary be limited to the systems level and that they not include personnel activities such as the use of procedures, which change constantly.

### **Definition of Worker, Definition of Controlled Area, and Consideration of Collocated Workers (§70.4, §70.61)**

DCS notes that NEI has addressed this issue in part in its comments associated with §70.61, noting further that they selected the MOX facility as an example of the problem associated with the current proposed language. DCS fully endorses and reiterates NEI’s comments in this regard.

As indicated in the definition of “worker” in §70.4, it is apparent that the NRC intends to consider individuals outside of the controlled area boundary as workers if they are subject to 10 CFR 20 requirements. We expect that the US Department of Energy (DOE) will also comment on this matter, and concur with their position that 10 CFR 835 provides an equivalent level of protection, such that collocated workers – inside or outside the controlled area – who are subject to the requirements of *either* 10 CFR 20 *or* 10 CFR 835 (or other equivalent control) should be considered “workers,” provided the licensee can demonstrate the ability to provide management measures (e.g., notification, evacuation, etc., as appropriate) in the event of an emergency.

### **Plutonium-Specific Provisions (§70.22, §70.23)**

An earlier draft revision to 10 CFR 70 (as documented in SECY 98-185 and subsequent discussions) included the deletion of plutonium-specific provisions contained in §§ 70.22(f), 70.23(a)(8), and 70.23(b). The latest draft retains these provisions, indicating that NRC Staff

now intend that they remain in 10 CFR 70. DCS notes some problems with this approach, and proposes reconsideration of the original plans to delete these sections. To wit:

**§70.22(f)** states that plutonium-related applicants shall provide information on the plant site, design basis of principal structures, systems, and components (SSCs), etc., as part of the license application. This section requires information that is also required in other sections of the revised rule, and is at best redundant in this regard (and therefore unnecessary).

More importantly, this section has not been revised to reflect the provisions of §70.65, which calls for an ISA Summary (containing the results of the safety assessment, also required in §70.22(f)) to be submitted *with* the license application, but not to be included as *part of* the license. As written, §70.22(f) seems to contradict §70.65 in this regard.

**§70.23(a)(8)** states that the Commission will approve a plutonium facility's license application only after construction of principal SSCs has been completed in accordance with the application. Certainly this is not a requirement unique to plutonium facilities. The NRC already has the authority to grant licenses conditional upon successful completion of certain actions (such as successful startup testing, training, etc.). Completion of construction in accordance with the license application seems such an obvious condition that this specific provision seems redundant and therefore unnecessary.

**§70.23(b)** states that the Commission will approve construction only after determination that the design bases of those SSCs, and the attendant quality assurance program, are adequate to protect against natural phenomena and the consequences of potential accidents. Our concerns are:

- (1) This provision as written seems contrary to other changes being proposed under the draft rule, as it addresses consequences of potential accidents, as opposed to the risk associated with credible accidents. Further, if this provision were amended to address risk as opposed to consequences – i.e., for consistency with the proposed §70.61 – it would be redundant to those proposed changes.
- (2) The standard set in §70.23(a)(7) for other 10CFR70 licensees is that construction can commence based on a conclusion by the Director of NMSS that environmental impacts have been appropriately addressed. Even in the absence of a mandated PHA submittal (a provision of the earlier draft also struck from the latest version), the discretion afforded the NRC under §70.23(a)(7) – i.e., NRC's authority over construction associated with “any...activity which the Commission determines will significantly affect the quality of the environment” – is adequate to ensure the sufficiency of information provided to NRC to authorize or disallow construction.

In consideration of these issues, and in the interest of statutory efficiency, DCS proposes that §70.23(a)(7) be clarified for applicability to plutonium facilities, and §§ 70.22(f), 70.23(a)(7),

and 70.23(b) be eliminated as previously proposed. Doing so would avoid the preconception that, irrespective of design features and material composition, plutonium is “more special” than other special nuclear materials.

DCS understands and shares the NRC’s sensitivity to issues associated with licensing a plutonium facility. Any particular requirements associated with a MOX facility (such as the requirement for specific content in support of a request for construction authorization) could then be applied via guidance in the MOX-specific Standard Review Plan, or via Commission Order, taking advantage of existing discretion under other provisions of the rule without unnecessarily prescriptive language in the rule that conflicts with other provisions intended to support risk-informed, performance-based regulation. DCS is committed to working with the NRC staff and the Commission to ensure that our license application is complete and sufficient to enable you to conclude that its design basis adequately protects the health and safety of the public, our workers, and the environment. We believe that we can develop such a basis within the proposed rule, without undue risk, and that the other, thoughtfully considered changes proposed to 10 CFR 70 provide for adequate demonstration our facility’s safety basis.

#### **Decommissioning Requirements (§70.22, §70.38)**

While not a part of the proposed change under consideration, DCS anticipates DOE will submit a comment requesting consideration of modifying the current rule to account for DOE-owned facilities. DCS shares this concern, which would presumably affect §§ 70.22(a)(9) and 70.38. In SECY-99-177, NRC Staff proposed that this issue could be resolved without a change to current regulations, but DCS is unaware as to a final Commission position in this regard. DCS intends to engage the NRC in this issue soon, to understand whether the decommissioning requirements for the MOX fuel fabrication facility will require a rulemaking. If it is apparent to the NRC that such a rulemaking will be required, DCS suggests, in the interest of efficiency, that it be addressed in this revision to 10 CFR 70.

#### **Worker Dose (§70.61)**

DCS notes that the application of occupational dose limits for accident conditions is virtually unprecedented in facilities and activities regulated by the NRC. In fact, in a recent change to 10 CFR 60, NMSS provided a rationale for why accident dose limits for workers were unnecessary:

*Although it is the Commission’s intent that the regulations in part 20 also be observed to the extent practicable [emphasis added] during emergencies, the Commission also recognizes that, in an actual emergency, operations that do not conform to the regulations may be necessary to protect public health and safety. Notwithstanding the general applicability of these regulations to all operational situations, it is not the Commission’s intent that these requirements apply to Category 2 events [i.e., 10 CFR*

60's "unlikely" and "highly unlikely" events) as a design basis for the facility. [60 FR 15181]

*The Commission notes that dose limits are not proposed for protection of workers during Category 2 design basis events, consistent with the policy in practice for facilities regulated by the Commission under parts 50 and 72. The Commission has determined that specific standards for the protection of workers during Category 2 events are not needed for part 60. First for some design basis events, the repository design and quality assurance enhancements employed to satisfy the proposed requirements, for protection of members of the public, during Category 2 events, will also provide a measure of protection for onsite workers. Second, onsite workers would have access to protective equipment (e.g., respirators) and clothing, should the need ever arise. Third, onsite workers would be trained in emergency response and procedures to deal with operational problems related to these kinds of events. Fourth, part 20 should provide adequate worker protection standards. [60 FR 15183]*

DCS agrees with this rationale, and proposes the elimination of explicit worker accident doses from the proposed rule. While it is true that there are differences between 10 CFR 70 facilities (specifically, in DCS' case, a MOX fuel fabrication facility), commercial reactors regulated under 10 CFR 50, and a potential preclosure repository operations area regulated under 10 CFR 60. It is not apparent, however, that 10 CFR 70 facilities are inherently more hazardous to workers. Commercial reactors involve considerably more energetic systems and potentially volatile source terms than do fuel fabrication facilities, and proposed repository operations involve analogous material handling operations within hot cells (for transfer of – notably irradiated – spent fuel). DCS proposes, therefore, that the NRC maintain consistency with past precedent in this regard, and eliminate the specific worker dose limits in 10 CFR 70.

#### **Log of Failures (§70.62), Facility Changes (§70.72)**

DCS notes NEI has commented extensively on these very important issues, and reiterates NEI's comments in this regard, especially with regard to the redundancy of a failure log (§70.62), requirements for notification of "any change" to the facility §§ 70.72(a) and 70.72(b), and the unnecessarily onerous 90-day notification requirements of § 70.72(d).

#### **Additional Content of Application and ISA Summary (§70.65)**

DCS notes in §70.65(b) that, consistent with discussions to date, the NRC anticipates the ISA Summary will be submitted with the license application, but not incorporated in the license. The wording in §70.65(a), however, seems to contradict this position, given the general heading *Additional Content of Applications*. DCS proposes removing "including the integrated safety analysis summary and a description of the management measures" to clarify the issue.

Absent this or some other clarification, DCS is concerned that §70.65(a), as written, leaves the impression that the ISA Summary is *part* of the application (and by reference in the material license certificate, part of the license). The requirement to include the ISA Summary is adequately covered in §70.65(b). If necessary (i.e., if not sufficiently implicit in the ISA Summary requirements), additional discussion of the inclusion of management measures as part of the ISA Summary could be included in §70.65(b).

DCS also notes that NEI has expressed a related concern (i.e., under the heading *Safety Program Definition [§70.65]*). DCS shares this concern as well, and suggests that the NRC clarify the relationship of the ISA Summary to the license and the safety basis to ensure consistency throughout the rule with the intent expressed in §70.65(b).

DCS specifically notes NEI's comment with regard to §70.65(b)(3), regarding the extent of information required in the ISA Summary for processes which have been evaluated but have no safety implications, and reiterates NEI's comments.