

February 3, 2006

MEMORANDUM TO: Mark C. Nolan, Chief
Enforcement Policy & Program Oversight Section
Office of Enforcement

FROM: Melanie A. Galloway, Chief
Technical Support Group \RA\
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Safety
and Safeguards

SUBJECT: ENFORCEMENT GUIDANCE MEMORANDUM - INTERIM GUIDANCE
FOR ENFORCEMENT OF 10 CFR 70.72(c)(2)

The purpose of this memorandum is to request that an Enforcement Guidance Memorandum (EGM) be issued so that the staff can exercise enforcement discretion with regard to failure of licensees to request the staff's prior approval, per 10 CFR 70.72(c)(2), for facility changes that involve removal of an item relied on for safety (IROFS) without an equivalent replacement of its safety function in certain instances. For those instances (discussed below), any violation should be considered minor and documentation of the violation and further enforcement discretion is not required. For other situations (also discussed below), violations of 10 CFR 70.72(c)(2) should still be issued.

10 CFR 70.72 contains the requirements for control of facility changes and the change process. As currently written 10 CFR 70.72(c)(2) states:

The licensee may make changes to the site, structures, processes, systems, equipment, components, computer programs, and activities of personnel, without prior Commission approval, if the change...does not remove, without at least an equivalent replacement of the safety function, an item relied on for safety that is listed in the integrated safety analysis summary.

Several licensees have indicated that they believe they can remove an IROFS without an equivalent replacement of its safety function without prior staff approval and still comply with 10 CFR 70.72(c)(2) as long as the performance requirements of 10 CFR 70.61 are met. The staff believes that these licensee beliefs are not consistent with 10 CFR 70.72(c)(2) as currently written, and some licensee-implemented changes based on these beliefs would be in violation of those requirements.

However, the staff believes that licensees should be afforded maximum flexibility consistent with the original intent of 10 CFR Part 70. Accordingly, in certain situations and under certain conditions, licensees should have the flexibility to remove an IROFS without an equivalent replacement without the staff's prior approval as long as the performance requirements are still met.

Briefly, those situations and conditions (to be considered minor violations) are:

- Removal of an IROFS that is not needed to meet 10 CFR 70.61,
- Replacement of an IROFS that is not needed to meet 10 CFR 70.61 without regard for whether the new IROFS is an equivalent replacement,
- Replacement of an IROFS needed to meet 10 CFR 70.61 with another IROFS which is an equivalent replacement with equivalent replacement defined as follows:
 - < Same type of control (passive engineered, active engineered, or administrative control),
 - < Controls the same parameter (e.g., mass, moderator),
 - < Limits the parameter to the same value,
 - < Has the same reliability (as determined in the ISA methodology).

To satisfy 10 CFR 70.72(c)(2), the staff's prior approval would still be required for removal of an IROFS needed to meet the performance requirements of 10 CFR 70.61 without an equivalent replacement. Also, if the replacement of the IROFS creates a new type of accident sequence¹ (i.e., introduces a new failure mode) that is not bounded by a sequence in the ISA Summary, the staff's prior approval is required by 10 CFR 70.72(c)(1)(i). New failure modes include:

- Replacement IROFS' failure, as initiating event, has a different effect on the system.
- Replacement IROFS' failure mode is different.
- Replacement IROFS' failure results in a different type or severity category of consequence.
- Replacement IROFS' failure adds to the violation of a safety limit on a different parameter.

The above position is consistent with the original intent of 10 CFR 70.72(c)(2) and the overall intent of the new 10 CFR Part 70. Because of this, the staff is issuing a Regulatory Issue Summary to inform all fuel cycle licensees of related enforcement discretion and is pursuing a formal rule change to 10 CFR 70.72(c)(2) to improve the clarity of the rule.

Contact: Fred Burrows, NMSS/FCSS
(301) 415-8110

¹Example of a replacement IROFS with an equivalent safety function creating a new type of accident sequence:

A solution tank is equipped with a level interlock. On generation of a high-level signal, a pump begins to pump the solution to another tank to prevent overflowing. The pump, the level probe, and the associated valving and instrumentation are classified as a criticality-related IROFS.

The licensee decides to replace the pump with a pump from another manufacturer. The new pump has the same pumping capacity, roughly the same reliability, and performs the same safety function. Under 10 CFR 70.72(c)(2), it is an equivalent replacement.

However, the original pump had a very limited oil capacity, whereas the new pump has a large oil reservoir. The presence of large amounts of oil in an unsafe volume reservoir has created several new credible accident sequences, including: (1) leaking of oil through the plenum into the solution, which can cause an exothermic chemical reaction (where the only hazard before this was criticality); (2) leaking of oil onto the floor, where it can moderate spilled uranium from a nearby glovebox; and (3) accumulation of an unsafe mass of uranium in the unsafe volume oil reservoir. Note that none of these new hazards involve the pump's credited safety function.

Briefly, those situations and conditions (to be considered minor violations) are:

- Removal of an IROFS that is not needed to meet 10 CFR 70.61,
- Replacement of an IROFS that is not needed to meet 10 CFR 70.61 without regard for whether the new IROFS is an equivalent replacement,
- Replacement of an IROFS needed to meet 10 CFR 70.61 with another IROFS which is an equivalent replacement with equivalent replacement defined as follows:
 - < Same type of control (passive engineered, active engineered, or administrative control),
 - < Controls the same parameter (e.g., mass, moderator),
 - < Limits the parameter to the same value,
 - < Has the same reliability (as determined in the ISA methodology).

To satisfy 10 CFR 70.72(c)(2), the staff's prior approval would still be required for removal of an IROFS needed to meet the performance requirements of 10 CFR 70.61 without an equivalent replacement. Also, if the replacement of the IROFS creates a new type of accident sequence² (i.e., introduces a new failure mode) that is not bounded by a sequence in the ISA Summary, the staff's prior approval is required by 10 CFR 70.72(c)(1)(i). New failure modes include:

- Replacement IROFS' failure, as initiating event, has a different effect on the system.
- Replacement IROFS' failure mode is different.
- Replacement IROFS' failure results in a different type or severity category of consequence.
- Replacement IROFS' failure adds to the violation of a safety limit on a different parameter.

The above position is consistent with the original intent of 10 CFR 70.72(c)(2) and the overall intent of the new 10 CFR Part 70. Because of this, the staff is issuing a Regulatory Issue Summary to inform all fuel cycle licensees of related enforcement discretion and is pursuing a formal rule change to 10 CFR 70.72(c)(2) to improve the clarity of the rule.

Contact: Fred Burrows, NMSS/FCSS
(301) 415-8110

DIISTRIBUTION:
FCSS r/f

ML060340144

OFC	FCSS	FCSS		
NAME	FBurrows	MGalloway		

Example of a replacement IROFS with an equivalent safety function creating a new type of accident sequence:

A solution tank is equipped with a level interlock. On generation of a high-level signal, a pump begins to pump the solution to another tank to prevent overflowing. The pump, the level probe, and the associated valving and instrumentation are classified as a criticality-related IROFS.

The licensee decides to replace the pump with a pump from another manufacturer. The new pump has the same pumping capacity, roughly the same reliability, and performs the same safety function. Under 10 CFR 70.72(c)(2), it is an equivalent replacement.

However, the original pump had a very limited oil capacity, whereas the new pump has a large oil reservoir. The presence of large amounts of oil in an unsafe volume reservoir has created several new credible accident sequences, including: (1) leaking of oil through the plenum into the solution, which can cause an exothermic chemical reaction (where the only hazard before this was criticality); (2) leaking of oil onto the floor, where it can moderate spilled uranium from a nearby glovebox; and (3) accumulation of an unsafe mass of uranium in the unsafe volume oil reservoir. Note that none of these new hazards involve the pump's credited safety function.

DATE	02/03/06	02/03/06		
------	----------	----------	--	--

OFFICIAL RECORD COPY