

PA-LR

**From:** Ram Subbaratnam  
**To:** Dellis1@entergy.com  
**Date:** 6/26/2006 10:33:00 AM  
**Subject:** Draft Qs on Section 2.3 on Pilgrim LRA staff request a phone call On June 27, 2006

Doug:

Draft RAIs on section 2.3.3.9, 10 and 14 are attached. The purpose of the call is to make an attempt, if any of these Qs can be resolved during the conference call before I issue a formal RAI. Thanks.  
Please call me for time convenient for a phone call tomorrow i.e June 27, 2006

Ram Subbaratnam  
PM Pilgrim LRA  
US NRC, 415-1478

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**Subject:** Draft Qs on Section 2.3 on Pilgrim LRA staff request a phone call On  
June 27, 2006  
**Creation Date** 6/26/2006 10:33:00 AM  
**From:** Ram Subbaratnam  
**Created By:** RXS2@nrc.gov

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June xx, 2006

**DRAFT**

MEMORANDUM TO: A. Louise Lund, Chief  
License Renewal Branch A  
Division of License Renewal  
Office of Nuclear Reactor Regulation

FROM: Sunil D. Weerakkody, Chief  
Fire Protection Branch  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE  
LICENSE RENEWAL APPLICATION - PILGRIM NUCLEAR POWER  
STATION - FIRE PROTECTION (TAC NO. MC9669)

The Fire Protection Branch reviewed the following sections of the License Renewal Application (LRA) submitted by the Entergy Nuclear Generating Company (Entergy) for Pilgrim Nuclear Power Station (PNPS):

Section 2.3.3.9	Fire Protection System—Water
Section 2.3.3.10	Fire Protection System—Halon
Section 2.3.3.14	Miscellaneous Systems in Scope for (a)(2)

The staff reviewed the application, methodology and systems that are within the scope of license renewal in accordance with 10 CFR 54.4(a), and subject to an Aging Management Review (AMR) in accordance with 10 CFR 54.21(a)(1). As a result of our review, attached is a request for additional information (RAI).

Our effort on TAC No. MC9669 is being continued. If you have any questions regarding these RAI, please contact us.

Docket Nos.: 50-293

Enclosure: As stated

CONTACTS: Angie Lavretta, DRA/NRR      Naeem Iqbal, DRA/NRR  
(301) 415-3285                              (301) 415-3346

MEMORANDUM TO: A. Louise Lund, Chief  
License Renewal Branch A  
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Naeem Iqbal, DRA/NRR (301) 415-3346

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REQUEST FOR ADDITIONAL INFORMATION  
LICENSE RENEWAL APPLICATION  
PILGRIM NUCLEAR POWER STATION  
DOCKET NO. 50-293  
TAC NO. MC9669

Office of Nuclear Reactor Regulation  
Division of Risk Assessment  
Fire Protection Branch

Part I.

The staff reviewed the Pilgrim Nuclear Power Station (PNPS) license renewal application (LRA), Final Safety Analysis Report (FSAR), and NRC safety evaluation dated December 21, 1978 approving the PNPS fire protection program (the SE), and supplements. The staff has identified that the following fire protection (FP) systems and components have been excluded from the scope of license renewal and an aging management review (AMR). These systems and components were not included in the license renewal boundaries and appear to have FP intended functions required for compliance with 10 CFR 50.48 as stated in 10 CFR 54.4. Therefore, in order to complete our review, the staff requires responses to the following RAI's:

**Section 2.3.3.9 Fire Protection System—Water**

RAI 2.3.3.9-1

LRA drawings LRA-M-218-SH-01-0, LRA-M-218-SH-06-0, and LRA-M-218-SH-08-0 show the sprinkler and water spray systems for the turbine lube oil storage and conditioning as out of scope (i.e., not colored in orange). Please verify whether the turbine lube oil storage sprinkler system, conditioning room ceiling sprinkler system, and conditioning pre-action water spray system, are in scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and not subject to an AMR, provide justification for the exclusion.

RAI 2.3.3.9-2

LRA drawing LRA-M-218-SH-02-0 shows the piping downstream of the city water supply as out of scope. With the city water supply serving as an alternate supply for the fire water system, please confirm and explain whether this line should be in scope for license renewal and subject to an AMR. If not, please explain the basis.

RAI 2.3.3.9-3

LRA Table 2.3.3-9 excludes several components shown in color (i.e., in scope) in the LRA drawing LRA-M-218-SH-01-0. For example, a reducer flange is shown in zone C-4 of the drawing and appears to restrict flow to the associated fire hose station. A blind flange is shown in zone F-6 in the reactor auxiliary bay. "Street box" housing is indicated in zone E-2. An unknown function or component is indicated by small trapezoid symbols shown mainly in headers upstream of hose stations in several buildings. And an unknown function or component is indicated by a semi-circle symbol in zone F-4 located along a 2.5 inch line upstream of two hose stations in the reactor building. Please confirm and explain whether these components should be included in Table 2.3.3-9, as passive components within scope for license renewal and subject to an AMR. If not, please justify the exclusion.

RAI 2.3.3.9-4

LRA Table 2.3.3-9 excludes several types of FP Water System components that appear in the SE and its supplements and/or FSAR, and which also appear in the LRA drawings colored in orange. These components are listed below.

- hose station
- pipe fittings
- couplings
- threaded connections
- restricting orifices
- chamber housing
- actuator housing (e.g., weight releasing cabinet housing)

For each, please determine whether the component should be included in Table 2.3.3.9, and if not, please provide the basis for the exclusion.

#### RAI 2.3.3.9-5

LRA Table 2.3.3-9 excludes other component types such as gear boxes, gauge snubbers, etc. Please determine whether these and/or additional component types are in scope and subject to an AMR, and should be included in Table 2.3.3-9. If not, please justify the exclusion.

#### RAI 2.3.3.9-6

LRA Tables 2.4-2, 2.4-3, 2.4-4, and 2.4-6 exclude noncombustible shields and curbs (and scuppers) from the list of structural FP components in scope for license renewal and subject to an AMR. Section 3.1.11 of the SE discusses the use of noncombustible shields between feedwater pumps to prevent oil release from one pump impinging on the other pumps. Sections 3.1.11 and 4.8 of the SE discuss the use of curbs (and scuppers) in the diesel oil day tank rooms to contain potential oil spills and prevent them from spreading to other fire areas in the event of an oil fire. Please determine whether noncombustible shields and curbs (and scuppers) should be included as components in scope for license renewal and subject to an AMR.

#### RAI 2.3.3.9-7

LRA Table 2.4-6 excludes smoke seals and fire retardant coatings from the list of structural bulk commodities components in scope for license renewal and subject to an AMR. The SE supplement dated March 24, 1988, discusses the installation of smoke seals in electrical conduits that pass through fire barriers and between fire areas. Sections 3.2.4 and 4.11 of the SE discuss the use of fire retardant coatings to protect PVC jacketed cables where the cables are not installed in enclosed cable trays. Please determine whether these two components should be in scope and subject to an AMR, and justify exclusion if they are out of scope.

#### RAI 2.3.3.9-8

Section 4.3.3 of the SE discusses shutoff, isolation, and sectionalizing valves in the flow path supplying hose stations and water suppression systems, as locked or fixed in position using tamper proof seals. Please clarify whether the seals are within scope for license renewal and subject to an AMR, with justification if they are excluded.

#### RAI 2.3.3.9-9

Section 4.3.4 of the SE discusses the use of hose stations for fire suppression. LRA drawings show the hose stations colored in orange (i.e., within scope). The hose reel components are included in LRA Table 2.4-6 as a structural bulk commodity component subject to an AMR. However, the hose station itself, hose connections, and associated valves, are not listed in Table 2.4-6. Please clarify whether the fire hose stations, connections, and associated valves in are in scope for license renewal and subject to an AMR. If they are excluded from the scope of license renewal and not subject to an AMR, provide justification for the exclusion. Please

also address whether the hose reels are considered active or passive components including the basis for the conclusion.

RAI 2.3.3.9-10

Section 4.3.5 of the SE discusses automatic water spray for the main power transformer, auxiliary transformer, and shutdown transformer. However, LRA drawing LRA-M-218-SH-01-0 and LRA-M-218-SH-05-0 show the Main Transformer Sprinkler System, Auxiliary Transformer Sprinkler System, Startup Transformer Sprinkler System, and Shutdown Transformer Sprinkler System, as out of scope of license renewal and AMR. Please confirm and explain whether these transformer sprinkler systems should be within scope for license renewal and subject to an AMR.

RAI 2.3.3.9-11

Section 4.3.5 of the SE discusses FP systems for the turbine lube oil reservoir, including automatic water spray and preaction water suppression. PNPS FSAR Section 10.8.3.1 lists sprinkler system FP areas and includes the turbine oil reservoir room, the turbine lube oil conditioning room, and the contaminated tool storage area, and pre-action systems for areas including the turbine oil reservoir area. However, the LRA and drawings (i.e., LRA-M-218-SH-01-0, LRA-M-218-SH-06-0, and LRA-M-218-SH-08-0) show the turbine lube oil reservoir pre-action sprinkler system, turbine lube oil storage room and ceiling sprinkler systems, and turbine lube oil conditioning pre-action water spray system, as out of scope. Please clarify whether these systems are in scope for license renewal and subject to an AMR. If not, please justify the exclusion.

RAI 2.3.3.9-12

Section 4.3.5 of the SE discusses the routing of pressurized FP piping in the proximity of a motor control center, which is a safety-related system in the reactor building. The SE states that a guard pipe will be provided to eliminate any adverse effect resulting from a water pipe failure in this area. However, the LRA does not specifically identify this guard pipe as in scope for license renewal or subject to an AMR. Please clarify whether this guard pipe is in scope and justify the exclusion if not.

[Note that LRA Section 2.3.3.9 does specifically address nonsafety-related portions that have the potential for adversely affecting safety-related equipment, indicating that these are evaluated in Section 2.3.3.14, with miscellaneous systems in scope for 10 CFR 54.4(a)(2). Table 2.3.3.14-12 lists FP components in scope for this purpose, and does not list guard pipe. The list does however include piping, with the intended function of maintaining a "pressure boundary." Although the footnote in this table states that the "pressure boundary" function includes providing structural/seismic support, the intended function of the guard pipe appears to be more closely "shelter or protection."]

RAI 2.3.3.9-13

Section 4.3.5 of the SE states that new sprinkler systems were proposed for the radwaste truck loading area and the access control area of the radwaste and control building. PNPS FSAR Section 10.8.3.1 identifies sprinkler system FP for the access control area (i.e., wet pipe) and the radwaste truck lock area (i.e., dry pipe). However, the LRA drawing LRA-M-218-SH-01-0 shows these areas as out of scope. Please clarify whether these systems are in scope for license renewal and subject to an AMR.

RAI 2.3.3.9-14

Section 4.8 of the SE discusses floor drains provided in all plant areas protected with fixed water fire suppression. LRA Section 2.3.3.9 states that structural FP components are reviewed

in the structural evaluation for the building in which they are contained or in the structural bulk commodities review. However, LRA Tables 2.4-2, 2.4-3, 2.4-4, and 2.4-6 do not list floor drains as a FP component in scope for license renewal or an AMR. Should floor drains be included in scope for license renewal and subject to an AMR? If not, please provide justification for the exclusion.

#### **Section 2.3.3.10 Fire Protection System—Halon**

##### RAI 2.3.3.10-1

LRA drawing LRA-M-218-SH-04-0 shows a manual pneumatic actuator colored in purple (i.e., in scope). However, the actuator housing is not listed in LRA Table 2.3.3-10. Please clarify whether actuator housings are in scope and subject to an AMR. If not, please justify the exclusion.

##### RAI 2.3.3.10-2

LRA Table 2.3.3-10 excludes (Halon) bottles from the list. Please clarify whether bottles are in scope and subject to an AMR. If not, please justify the exclusion.

#### **Section 2.3.3.14 Miscellaneous Systems in Scope for (a)(2)**

##### RAI 2.3.3.14-1

See RAI 2.3.3.9-12, above.

### Part II.

In addition to the preceding RAI's regarding the scope of this license renewal and AMR review, the staff requests clarification on the following related technical issues which are needed to complete the review:

##### RAI 1

LRA drawing LRA-M-218-SH-03-0 appears to show a break in the S.E.P. Diesel Pump line, colored in orange at the KB/KC interface. Please identify and describe the status of the line at this interface.

##### RAI 2

LRA Table 2.3.3-9 lists two component types, i.e., silencer and turbocharger, whose functions are unclear. Please describe the functions of these two components and their associated systems.

##### RAI 3

Section 3.2.6 and 4.7.2 of the SE and the supplement dated October 7, 1980, discuss the need for suppression to prevent a charcoal fire in the augmented off-gas system. PNPS FSAR Table 10.8-2 lists two fire hose stations in the Off-gas Retention Building at elevations 23 feet and 5 feet. These fire hose stations are also indicated in LRA drawing LRA-M-218-SH-01-0, as in scope. Are these hose stations intended to suppress a charcoal fire in the charcoal vessel in that room? If not, please explain whether suppression is provided for this purpose and why.

##### RAI 4

Section 4.4 of the SE discusses carbon dioxide as a fixed fire suppression system for the cable spreading room, turbine building tank, and hose reels in the switchgear area, reactor feed pump



area, and generator area. SE supplements discuss conversion of the carbon dioxide fixed suppression capability to a Halon fixed suppression capability for the cable spreading room and switchgear area. The status of the other areas (i.e., the turbine building tank and the hose reels in the reactor feed pump and generator areas) is unclear. Please clarify whether fixed suppression exists for these other areas. If there is suppression, please describe the type of suppression provided and explain whether it is in scope and why.

RAI 5

Section 4.4 of the SE states that a total flooding Halon extinguishing system will be installed for the computer and storage room, and PNPS FSAR Section 10.8.3.2 discusses automatic Halon suppression for the plant computer room and O&M building record storage vault. However, the LRA drawing LRA-M-218-SH-04-0, does not show the computer and storage room as in scope for license renewal and subject to an AMR. Furthermore, LRA Section 2.3.3-10 states that only passive mechanical components in the cable spreading room Halon system are required for compliance with 10 CFR 50.48 (fire protection regulations).

Although it is clear that these two areas are not in scope for license renewal, are these areas protected with automatic Halon suppression?