

ATTACHMENT II

SNC Response to NRC Request For Additional Information Related to
Power Uprate Submittal - Joseph M. Farley Nuclear Plant, Units 1 and 2

CORRECTED PAGE NOS. 58 & 59

"FARLEY NUCLEAR PLANT UNITS 1 AND 2
POWER UPRATE PROJECT BOP LICENSING REPORT"

(ATTACHMENT 6 TO SNC SUBMITTAL DATED FEBRUARY 14, 1997)

CORRECTED PAGE NO. 37
(TABLE E)

"FARLEY NUCLEAR PLANT RESPONSE TO REQUEST
FOR ADDITIONAL INFORMATION RELATED TO POWER UPRATE
FACILITY OPERATING LICENSE AND TECHNICAL SPECIFICATIONS CHANGE
REQUEST"

(ATTACHMENT I TO SNC SUBMITTAL DATED AUGUST 5, 1997)

Case 1. An SGTR with a preaccident iodine spike of 30 $\mu\text{Ci/gm}$ results in offsite doses less than 10 CFR 100 guidelines, which meets the acceptance criteria.

	Thyroid Dose (Rem)	Whole Body Dose (Rem)	Beta Skin Dose (Rem)
EAB	19	0.15	0.20
LPZ	7.7	0.06	0.07

Case 2. An SGTR with an accident initiated iodine spike with an appearance rate 500 times the equilibrium rate, corresponding to the technical specification limit of 0.5 $\mu\text{Ci/gm}$ results in offsite doses that are a small fraction (10%) of the 10 CFR 100 guidelines, which also meets the acceptance criteria.

	Thyroid Dose (Rem)	Whole Body Dose (Rem)	Beta Skin Dose (Rem)
EAB	2.8	0.13	0.19
LPZ	1.7	0.05	0.07

The potential for uncover of the steam generator tubes during the event was also evaluated for uprated conditions. Assuming technical specification limit for RCS activity (0.5 $\mu\text{Ci/gm}$) and leak rate (150 gpd to each intact generator) and release directly to the environment (*i.e.*, no mixing with the secondary side water) for the first 30 minutes, the offsite doses remain a small fraction of the 10 CFR 100 guidelines.

2.16.7.3.2 Evaluation of the Radiological Consequences of a Main Steam Line Break

The radiological consequences of the MSLB were evaluated utilizing the assumptions of Standard Review Plan Section 15.1.5 and the RCS leak rates approved with Technical Specifications Amendments 132 (Unit 1) and 124 (Unit 2), *i.e.*, 150 gpd/intact steam generator and 23.8 gpm from the ruptured steam generator. For the most limiting case (accident initiated iodine spike 500 times the normal iodine appearance rate and no secondary side mixing), the offsite doses are a small fraction of the 10 CFR 100 guidelines which meet the acceptance criteria.

	Thyroid Dose (Rem)	Whole Body Dose (Rem)	Beta Skin Dose (Rem)
EAB	17	< 1	< 1
LPZ	26	< 1	< 1

In addition, the impact of implementing steam generator tube alternate repair criteria on control room thyroid dose was evaluated for the most limiting accident initiated iodine spike case. For this case the control room thyroid dose was 2.3 Rem using the assumptions described above.

2.16.7.3.3 Evaluation of the Radiological Consequences of a Loss of Offsite Power, Loss of Load, Turbine Trip

The radiological consequences of the bounding steam releases from a loss of offsite power, loss of load, and turbine trip were evaluated utilizing the assumptions of Standard Review Plan Sections 15.2.1-15.2-6, except that partition factors are assumed to be limited to 10; *i.e.*, there is no tube uncover nor immediate flashing of primary to secondary leakage consistent with the current FSAR, Section 15.2.9. These releases result in offsite doses which meet the acceptance criteria assuming no iodine spike.

	Thyroid Dose (Rem)	Whole Body Dose (Rem)	Beta Skin Dose (Rem)
EAB	8.9×10^{-1}	1.2×10^{-3}	7.9×10^{-4}
LPZ	7.6×10^{-1}	8.1×10^{-4}	5.8×10^{-4}

A pre-existing spike which increases the RCS iodine concentrations to $30 \mu\text{Ci/gm DEI}_{131}$ results in an increase in thyroid dose to 0.93 Rem and 0.82 Rem at the EAB and LPZ respectively.

TABLE E
PARAMETERS USED IN STEAM LINE BREAK ANALYSES

Core thermal power (MWt)	2831
Tube leak rate prior to accident (gpd/per steam generator)	150
Tube leak rate after accident (gpd/per intact steam generator)	150
Tube leak rate after accident (gpm from ruptured steam generator)	23.8
Offsite power	Lost
Fuel defects (%)	1 ^(a)
Secondary side DEI ₁₃₁ activity (μCi/gm)	0.1
Iodine partition factor for initial steam release from defective steam generator	1.0
Iodine partition factor in non-defective steam generators prior to and during accident	0.1
Time to isolate defective steam generator (h)	8
Initial steam release from defective steam generator (lb) (min)	473,000 (0-30)
Steam release from two non-defective steam generators (lb)(h)	339,000 (0-2) 730,000 (2-8)
Feedwater flow to two non-defective steam generators (lb)(h)	442,000 (0-2) 791,000 (2-8)
Meteorology	Accident (see FSAR Appendix 15b)

a. A pre-existing iodine spike of 9 μCi/gm or an accident initiated iodine spike 500 times the appearance rate for a normal primary coolant DEI₁₃₁ activity of 0.15μCi/gm is assumed.

SCS/jaw - 3/15/98