OS2

SHEARON HARRIS NUCLEAR POWER PLANT
OFF-SITE DOSE CALCULATION MANUAL

(ODCM)

Revision 3

Advance Change 3/5

Docket No. STN-50-400

CAROLINA POWER & LIGHT COMPANY

PNSC Chairman's Approval ______________________

Effective Date January 06, 1993

Table 3.2-2

Distance to the Nearest Special Locations
for the Shearon Harris Nuclear Power Plant (miles)*
(Comparison of 1991/1992 Data)

Sector	Exclusion Boundary	Residence		Milk Animal		Garden		Meat Animal	
		1991	1992	1991	1992	1991	1992	1991	1992
N	1.32	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
NNE	1.33	1.8	1.8	---	---	1.7	1.7	3.5	3.1
NE	1.33	2.3	2.3	---	---	2.3	2.3	2.3	2.3
ENE	1.33	3.6	3.6	---	---	3.8	3.8	---	---
E	1.33	1.9	1.9	---	---	4.7	4.7	2.2	2.2
ESE	1.33	2.7	2.7	---	---	4.4	---	4.4	4.4
SE	1.33	4.3	4.3	---	---	4.4	4.4	4.3	4.3
SSE	1.33	4.4	4.4	---	---	4.6	4.6	---	---
S	1.36	---	---	---	---	---	---	---	---
SSW	1.33	3.9	3.9	---	---	3.9	3.9	---	---
SW	1.33	2.8	2.8	---	---	2.8	2.8	---	---
WSW	1.33	4.3	4.3	---	---	4.3	4.3	---	---
W	1.33	2.8	2.8	---	---	2.9	2.9	2.9	2.9
WNW	1.33	2.1	2.1	---	---	2.9	2.1	---	---
NW	1.26	2.1	2.1	---	---	3.8	3.8	3.8	3.8
NNW	1.26	1.7	1.5	---	---	1.7	1.7	1.7	1.7

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As of June, 1992.

* Distance estimates are ± 0.1 miles except at the exclusion boundary.

TABLE 4.1
(continued)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Sample Point ID No.	Sample Point, Description[1] Distance, and Direction	Sampling and Collection Frequency	Analysis Frequency	Analysis
3. Waterborne					
a. Surface Water	26	Harris Lake Spillway S sector, 4.6 mi. from site.	Composite sample[5] collected over a period of $\leq$ 31 days.	Monthly Quarterly	Gross Beta Gamma Isotopic[4]
	38	Cape Fear Steam Electric Plant Intake Structure (Control Station)[3] WSW sector, 6.1 mi. from site.			
	40	NE Harnett Metro Water Treatment Plant Intake Building Duncan Street, Lilington. SSE section ~17 mi. from site.			
b. Groundwater	39	On-site deep well in the proximity of the diabase dikes. SSW sector, 0.7 mi. from site.	Grab Sample quarterly	Each Sample	Gamma Isotopic[4] Tritium

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TABLE 4.1
(continued)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Sample Point ID No.	Sample Point, Description[1] Distance, and Direction	Sampling and Collection Frequency	Analysis Frequency	Analysis
c. Drinking water	38	Cape Fear Steam Electric Plant Intake Structure (Control Station)[3]. WSW sector, 6.1 mi. from site.	Composite sample[5] over two-week period if I-131 analysis is performed; monthly composite otherwise.	I-131 on each composite when the dose[6] calculated for the comsumption of the water is greater than 1 mrem per yr.	I-131
				Monthly	Gross Beta Gamma Isotopic[4]
				Quarterly	Tritium
	40	NE Harnett Metro Water Treatment Plant Intake Building. Duncan Street, Lillington. SSE sector, ~17 mi. from site.			
	51	SHNPP Water Treatment Building on site.			
d. Sediment from Shoreline	26	Harris Lake Spillway. S sector, 4.6 mi. from site.	Surface sediment sample semiannually	Each sample	Gamma Isotopic[4]

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Description of Changes to the ODCM

ODCM Change 3/5

ODCM Change 3/5 incorporated two administrative changes into the ODCM.

Table 3.2-2

This table was updated to show the results of the annual land use census. The land use census shows changes to the closest resident, milk animal, garden, and/or meat animal.

Table 4.1, Radiological Environmental Monitoring Program.

The water sampler at location 40 was moved from the water intake into the water treatment building. The sampler continues to monitor the same source of water. The sampler was moved to allow easier access for enhanced personnel safety.

The location description was changed in Table 4.1, 3.a location 40 and 3.c location 40.

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SHEARON HARRIS NUCLEAR POWER PLANT

OFF-SITE DOSE CALCULATION MANUAL

(ODCM)

Revision 3

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Docket No. STN-50-400

CAROLINA POWER & LIGHT COMPANY

PNSC Chairman's Approval [signature]

Effective Date 4/29/93

2.0 LIQUID EFFLUENTS

Radioactive materials released in liquid effluents from SHNPP to unrestricted areas are required to implement 10 CFR 50 Appendix I (Technical Specification 3.11.1.2) and be limited to the concentrations specified in 10 CFR 20, Appendix B, Table 2, Column 2 (Technical Specification 3.11.1.1). For dissolved or entrained noble gases the concentration shall be limited to 2E-4 μCi/ml total activity. The liquid effluent release point is at the point of discharge from the Cooling Tower Blowdown Line into Harris Lake (see Figure 2.1-3 and T/S Figure 5.1-3). As of January 1, 1993, these values are EC values. AC 3/6 AC 3/6

Radioactive liquids are routinely released as batches from the Waste Monitor Tank (WMT), Waste Evaporator Condensate Tank (WECT), and Treated Laundry and Hot Shower Tank (TL&HST). Batch releases may also originate from the Secondary Waste Sample Tank (SWST). These tanks are shown in Figures 2.1-1 and 2.1-2. Effluent monitor identification numbers are provided in Appendix C. Liquid effluent dilution prior to release to Harris Lake is provided by the Cooling Tower Blowdown Line. Concurrent batch releases should not normally occur at SHNPP. (7)

Continuous releases are routinely permitted from the SWST and the Normal Service Water (NSW) system because a low potential for radioactive contamination exists. These releases are checked by effluent monitors on the SWST (Figure 2.1-2) and the NSW lines (Figure 2.1-3).

The turbine building floor drains and the outside tank area drains (Figure 2.1-4) are monitored effluent lines with low probability of radioactive contamination. AC 3/3

The radioactive liquid waste sampling and analysis required for batch and continuous releases are found in Table 4.11-1 of the Technical Specifications.

2.1.1 Batch Releases (continued)

C - Radioactivity concentration of radionuclides in the liquid effluent prior to dilution (μCi/ml) from analysis of the liquid effluent to be released or from composite sample analysis.

MPC - MPC_g, MPC_a, MPC_s, MPC_t, and MPC_{Fe-55} are the most restrictive values for the appropriate gamma (g)- and alpha (a)-emitting, and strontium (s) radionuclides, and for tritium (t), and Fe-55, from 10 CFR 20, Appendix B, Table 2, Column 2. As of January 1, 1993, these values are EC values. (9) AC 3/6

C_g - The measured concentration of each gamma-emitting radionuclide observed by gamma spectroscopy including noble gases, μCi/ml. If no gamma activity is detectable then assume a Cs-134 activity of 9E-07 μCi/ml and proceed to the Set Point Calculation Method: Cs-134. AC 3/6

C_a - The measured concentration of alpha-emitting radionuclides as determined by gross alpha analysis of the previous monthly composite sample, μCi/ml.

C_s - The measured concentration of Sr-89 and Sr-90 as determined by analysis of the previous quarterly composite sample, μCi/ml.

2.1.1 Batch Releases (continued)

C_t - The measured concentration of H-3 as determined by analysis of the liquid effluent or previous monthly composite sample, μCi/ml.

C_{Fe-55} - The measured concentration of Fe-55 as determined by analysis of the previous quarterly composite sample, μCi/ml.

2 - A safety factor used to assure that the radionuclide concentrations are approximately 50% of the limits specified in 10 CFR 20, Appendix B, Table 2, Column 2 at the point of discharge.

AC 3/6 (9) AC 3/6

3. Maximum Batch Release Rate

$$MRR = \frac{B}{D_o}(Tm) \quad (2.1\text{-}5)$$

where:

MRR - Maximum release rate of the tank batch, gpm

B - Cooling tower blowdown dilution flow rate. The minimum dilution flow rate for each setting is shown in Table 2.1-2.

- 4.7E+03 gpm nominal average flow rate based on measured release rate data during January 1989. (10)

D_o - Minimum acceptable dilution factor

2.1.1 Batch Releases (continued)

T_m - Fraction of the available dilution volume which may be assigned to a particular release to ensure discharge point limits are not exceeded by simultaneous radioactive liquid releases. The value of T_m is based on assumed operational considerations for simultaneous releases but normally will be 0.8 for a batch release and 0.2 for a continuous release. (11)

4. Available Dilution Factor

The Available Dilution Factor, D_{avl}, represents the cooling tower blowdown flow rate available during the time of a batch release to dilute the tank activities to or below the Technical Specification limits.

$$D_{avl} = \frac{B + RR}{RR} \qquad (2.1\text{-}6)$$

(12)

where:

D_{avl} - Available dilution factor

RR - Tank release rate, gpm

- The lower value between the calculated MRR and the pump discharge capacity in Table 2.1-1.

5. Prerelease Criteria For Permitting Batch Releases - Compliance with 10 CFR 20 - Based Technical Specifications (13)

Technical Specification 3.11.1.1 requires that the values of 10 CFR 20, Appendix B, Table 2, Column 2 are not exceeded at the point of discharge for any radionuclide in a release. Therefore,

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2.1.1 Batch Releases (continued)

where:

$$MDC = \frac{2\,\frac{\sqrt{Bkg}}{2T}}{E_m}$$

τ = Time constant of the signal processor, minutes. Table 2.1-3.

If not, postpone the release and decontaminate or replace the sample chamber to reduce the background, then recalculate HSP and ASP using the new, lower background.

(16)

7. Effluent Monitor Set Point Based on Cs-134 (Set Point Calculation Method : Cs-134) AC 3/6

If analysis of the batch sample indicates all gamma-emitting nuclides are < LLD, (as defined in Technical Specification Table 4.11-1), the tank gamma activity, Cg, may be assumed to consist only of Cs-134. This nuclide has the lowest EC of any to be found in liquid effluents and provides a conservative basis for a monitor set point. (17) AC 3/6

a. Liquid Channel Set Point based on the Cs-134 EC and the available dilution flow. AC 3/6

(1) Monitor High Alarm Set Point, $HSP_{m\text{-}Cs\text{-}134}$, ($\mu$Ci/ml). AC 3/6

2.1.1 Batch Releases (continued)

$$HSP_{m\text{-}Cs\text{-}134} = \frac{\frac{D_{avlgc}}{D_{ogc}} \bullet [\ C_g \bullet (\text{Sens g})] + Bkg}{E_m} \qquad (2.1\text{-}10)$$

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(17)

where:

C_g = 3E-07 μCi/ml, the EC for Cs-134. Also used in the calculation of D_o.

Sens g = 2.60E+08 cpm/μCi/ml, the monitor sensitivity for Cs-134 gamma energy, Table 2.1-4.

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(2) Monitor Alert Alarm Set Point, $ASP_{m\text{-}Cs\text{-}134}$, (μCi/ml).

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$$ASP_{m\text{-}Cs\text{-}134} = [(HSP_{m\text{-}Cs\text{-}134} - Bkg_m)\ Fx] + Bkg_m \qquad (2.1.11)$$

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(3) Check for Excessive Monitor Background

(18)

Verify that:

$$0.1\ ((HSP_{m\text{-}Cs\text{-}134} - Bkg_m)\ F_x) > 2\ \frac{\sqrt{\frac{Bkg}{2T}}}{E_m} \qquad (2.1\text{-}12$$

AC 3/6

8. Postrelease Compliance With 10 CFR 20 - Based Technical Specification

a. Postrelease Compliance Check

To show final compliance with Technical Specification 3.11.1.1 the following relationship must hold:

2.1.2 Continuous Releases

The continuous releases from the SWST and the NSW return lines are monitored as shown in Figures 2.1-2 and 2.1-3. The function of these monitors, in contrast to the isolation function of batch release tank monitors, is to provide an indication of low levels of radioactivity in the effluent.

1. Effluent Monitor Set Point based on an assumed FSAR nuclide mix for the SWST (Set Point Calculation Method : CRP)

   a. Liquid channel set point

      (1) Monitor high alarm set point, HSP_m (μCi/ml).

$$HSP_m = \frac{0.1\ MPC_{eff}\ (Sens_{eff}) + Bkg}{E_m},\ \mu Ci/ml \qquad (2.1\text{-}15)$$

where:

MPC_{eff} – Weighted EC for the SWST outlet nuclides listed in Table 11.2.1-5 of the FSAR.

$Sens_{eff}$ – $\sum_g$ (Sens g x % abundance) for the SWST nuclide mix, cpm/μCi/ml.

      (2) Monitor Alert Alarm Set Point, ASP_m (μCi/ml)

$$ASP_m = [(HSP_m - Bkg_m)\ F_x] + Bkg \qquad (2.1\text{-}16)$$

When the monitor is operable and not in alarm, analysis of weekly composite samples is not required by Technical Specification Table 4.11-1.

TABLE 2.1-4

Liquid Effluent Monitor Gamma Sensitivities (Sens g)

NUCLIDE	SENSITIVITY * cpm/μCi/cc	NUCLIDE	SENSITIVITY * cpm/μCi/cc
Ag-110M	3.22E+08	Ni-65	2.24E+07
Ar-41	9.28E+07	Np-239	1.13E+08
Ba-139	2.34E+07	Pr-143	1.08E+02
Ba-140	6.01E+07	Pr-144	1.68E+06
Ba-141	2.53E+08	Rb-86	8.39E+06
Ba-142	1.47E+08	Rb-88	1.45E+07
Br-83	1.95E+06	Rb-89	1.22E+08
Br-84	6.50E+07	Ru-103	1.38E+08
Br-85	6.76E+06	Ru-105	1.71E+08
Ce-141	6.11E+07	Ru-106	4.52E+07
Ce-143	9.60E+07	Sb-124	1.59E+08
Ce-144	1.30E+07	Sb-125	1.21E+08
Co-58	1.46E+08	Sn-113	3.08E+06
Co-60	1.89E+08	Sr-89	1.46E+04
Cr-51	1.61E+07	Sr-91	8.16E+07
Cs-134	2.60E+08	Sr-92	1.01E+08
Cs-136	3.37E+08	Tc-101	1.66E+08
Cs-137	1.04E+08	Tc-99M	1.11E+08
Cs-138	1.15E+08	Te-125M	3.00E+05
Cu-64	5.16E+07	Te-127	1.97E+06
Fe-59	1.26E+08 | AC 3/6	Te-127M	1.33E+04
Hf-181	2.08E+08	Te-129	1.58E+07
I-130	4.13E+08	Te-129M	5.17E+06
I-131	1.55E+08	Te-131	1.50E+08
I-132	3.31E+08	Te-131M	2.17E+08
I-133	1.39E+08	Te-132	1.39E+08
I-134	3.08E+08	W-187	1.04E+08
I-135	1.03E+08	Xe-131M	2.62E+06
Kr-85	6.20E+05	Xe-133	9.90E+04
Kr-85M	1.20E+08	Xe-133M	1.59E+07
Kr-87	9.19E+07	Xe-135	1.47E+08
Kr-88	7.49E+07	Xe-135M	1.14E+08
Kr-89	1.39E+08	Xe-137	4.85E+07
Kr-90	1.59E+08	Xe-138	1.20E+08
La-140	1.53E+08	Y-91	2.83E+05
La-142	9.59E+07	Y-91M	1.28E+08
Mn-54	1.03E+08	Y-92	2.76E+07
Mn-56	1.01E+08	Y-93	1.37E+07
Mo-99	3.47E+07	Zn-65	5.24E+07
Na-24	9.36E+07	Zn-69	2.22E+03
Nb-95	1.06E+08	Zr-95	1.07E+08
Nd-147	2.86E+07	Zr-97	2.68E+07

*SENSITIVITY = 80% of weighted response to 100 - 1400 keV gammas for Ga RD-53 offline sodium iodide (NaI) detector (reference GA Manual E-115-904, June 1980). Abundances for each gamma from "Radioactive Decay Tables" by David C. Kocher (Report DOE/TIC-11026, Washington, D.C., 1981)

(32)

ODCM Change 3/6
Description of Changes

A. Change the ODCM software to use Effluent Concentration (EC) values instead of Maximum Permissible Concentrations (MPC) values. All of the values are contained in user-editable data tables in the ODCM software, so therefor there are no changes to the ODCM document,

B. Change the ODCM document in support of the change from MPC's to EC's

Page 2-1, Section 2.0

In changing the MPC's to EC's, the NRC renamed the location of this information in 10 CFR 20, Appendix B, from "...Table II, Column 2" to "Table 2, Column 2."

Also, the last sentence of the first paragraph was added for further clarification.

Added: As of January 1, 1993, these values are EC values.

Page 2-4, Section 2.1.1, C_t term

This method was changed to reference the Cs-134 method instead of the I-131 method. Under the new 10 CFR 20 values, Cs-134 has replaced I-131 as the most restrictive nuclide.

Page 2-5, Section 2.1.1, 2 term

Changed "Table II" to "Table 2" as described above.

Page 2-6, Section 2.1.1.5

The term MPC is used in this section. The following change was made:

OLD: "Technical Specification 3.11.1.1 requires that the MPC values of 10CFR20 are not exceeded..."

NEW: "Technical Specification 3.11.1.1 requires that the values of 10 CFR 20, Appendix B, Table 2, Column 2 are not exceeded..."

This will be consistent with wording in other places in the ODCM, and will also resolve a minor comment from the ODCM review performed by a NRC contractor.

Page 2-10 and 2-11, Section 2.1.1.7

Change MPC to EC.

Change the designation from I-131 to Cs-134.

See the Impact of Changes for a complete description.

Page 2-13, Section 2.1.2.1 & Equation (2.1-15)

In the term MPC_{eff}, change MPC to EC.

C. The following changes are being made to enhance the ODCM. All changes are minor and will minimal impact on the ODCM.

Page 2-5, Section 2.1.1, C_t term

Added "...the liquid effluent..." to the definition. This was added to allow either specific analysis results of an individual tank to be used, or the results of the previous composite sample.

Page 2-13, Section 2.1.2.1 & Equation (2.1-15)

In the term MPC_{eff}, revise a reference to Table 11.2.1-5 of the FSAR. This table was previously Table 11.2.1-14, and was revised with FSAR revision 43.

Page 2-25, Table 2.1-4

An error in the calculation of the sensitivity of Fe-59 was discovered during recalculation of the setpoints for continuous release monitors. Setpoints were being recalculated due to the change in MPC to EC and the change in mix due to the change of FSAR Table 11.2.1-5. The change in sensitivity will have minimum impact on SHNPP as Fe-59 is not a substantial contributor to the setpoint, and Fe-59 is seen infrequently (6/200 releases)

Old Sensitivity - 1.09 E+09 cpm/uCi/cc
New Sensitivity - 1.26 E+08 cpm/uCi/cc

D. The ODCM has two sections where the term "MPC" is used, but will not be changed at this time. In these cases, MPC is used to describe a variable used by the ODCM software. Changing a variable name would require an ODCM software change, along with complete verification and validation. Since the ODCM software is scheduled for replacement in 1993, the extensive effort to change these at this time is not cost justified. Examples of this are:

Page 2-4, Section 2.1.1, MPC term

The term "MPC" is a generic identifier for the variables "MPC_g, MPC_a, MPC_s, MPC_i, and $MPC_{Fe\text{-}55}$.

In these cases, the software is accessing a data table to obtain the variable value. These values are the new 10 CFR 20 EC values.

Page 2-13, Section 2.1.2.1 & Equation (2.1-15)

The term MPC_{eff} is a variable name as described above.

In recalculating the setpoint, EC values were used.

ODCM Change 3/6
Impact of Changes

A. Summary:

The following changes to the ODCM do not have any affect on the probability of occurrence or the consequences of any analyzed accident. No equipment important to safety is affected in any way, nor is any possibility of a different accident created. This change does not have any impact on any Technical Specification margin of safety.

The changes to the ODCM will not have any impact on the safety of the public as the doses received by the public will not change.

Compliance with applicable regulations is being maintained. 10 CFR 20 compliance is being ensured by using the EC values. 10 CFR 50 compliance is not impacted since the change does not have any impact on 10 CFR 50 yearly doses.

B. Impact of using EC values instead of MPC values:

The "old" 10 CFR 20 used the term "MPC" to describe the Maximum Permissible Concentration of radionuclides that was permitted in unrestricted areas of the environment. The new 10 CFR 20 recalculated these values with new parameters, and replaced them with a term called "Effluent Concentration" (EC). MPC values were based on that concentration which will give a member of the public a dose of 500 mRem per year, if the member of the public is continuously exposed to 1 MPC water. The EC value is based on a concentration which will give 50 mRem per year. The change from MPC's to EC's resulted in some of the values going up and some of them going down. A few even stayed the same. A comparison of MPC's and EC's is attached.

The changes from MPC to EC will only affect the liquid release setpoint and the rate at which liquid effluents can be released. Radiation Monitor alarm setpoints will generally be more conservative. On a typical Waste Monitor Tank, the setpoint calculated using EC's rather than MPC's will be about a factor of 10 more restrictive. In some cases, release rates will be restricted, particularly in a tank with a high H-3 concentration.

Tritium may pose a problem in making liquid releases. Tritium has always been the isotope that restricted the release of radioactive liquids because of the low dilution flow available. The old MPC of tritium was 3E-03, and the new EC is 1E-3, a factor of three more restrictive. Tritium in the RCS has been increasing with each core load, and is expected to be at the 1.8-2.0 uCi/ml level during this fuel cycle. RCS Tritium is currently at 1.5 uCi/ml. When making a Waste Evaporator Condensate Tank release with the tritium at this level, Rad Waste must either release very slowly (1-3 gpm) or bleed WECT water over to the WMT's to "dilute" the tritium.

C. Impact on using Cs-134 instead of I-131 for setpoint determination. (Setpoint Method - I-131)

Cs-134 is now the most restrictive isotope instead of I-131. As a result, the I-131 setpoint methodology will need to be changed to a Cs-134 methodology. Cs-134 has an EC of 9E-07, compared to the I-131 EC of 1E-06.

An "alternate setpoint methodology" is used when the effluent being release has no detectable gamma-emitting nuclides. This is the case primarily when releasing a SWST in the batch mode, or when the evaporators are used to process rad waste. Since the effluent contains no gamma emitters, there is nothing to base a setpoint on. Therefore, 1 EC of the most restrictive nuclide is assumed to be present, and the release setpoint calculated using those parameters.

In changing to use Cs-134 values, there will be no change in methodology, only in the values used to calculate the setpoint and the name of the setpoint methodology. This method is used very infrequently, and has not been used on any batch release in 1992 or 1993.

Our current ODCM software automatically switches to use the alternate methodology when there is no gamma activity in the sample, and there is no way to disable the switch. The software also has I-131 specific parameters hard coded into the setpoint calculation. This presents a problem in that when a release is prepared and the effluent contains no gamma emitters, it will use the I-131 parameters, which is now less conservative than using Cs-134.

The long-term fix for this will be obtained when the new ODCM software is installed. The changes will be a part of the new software. The short term fix will be to use the Cs-134 methodology as described in the ODCM and manually calculate the setpoints and related information. This information will be hand-written onto the release permit in place of the I-131 information.

Procedures will be revised to put into place the required administrative steps for using this setpoint methodology. The administrative steps will be:

Have the Chemistry tech preparing the release look for the setpoint method used. If the I-131 method is used, the release process would be stopped until new setpoints are calculated using the Cs-134 parameters.

The Cs-134 setpoint calculation will be independently checked by a knowledgeable member of the E&C staff.

The revised setpoint information will be written onto the release permit in place of the computer calculated values.

The Rad Waste procedures governing releases of liquid effluents will be revised to have the RW operator verify that either the REAL (normal) setpoint method was used, or that if the Cs-134 method were used, that the correct setpoint is indicated. These items will be verified prior to initiating the release.

D. Dose Impact of 10 CFR 20 Changes

Although the basis of the limit (MPC-to-EC) has been lowered by a factor of 10 (500 mRem to 50 mRem), there will be no impact with reguard to doses to the environment. 40 CFR 190 has a dose limit of 25 mRem, and 10 CFR 50 Appendix I has a dose limit of 3 mRem. Both of these limits have been, and will continue to be met.

E. Other Changes

Two additional changes are being made to the ODCM. Neither change will have any impact on the safety of the public or the operation of the plant.

Page 2-5, Section 2.1.1, c_i term.

Adding "...the liquid effluent..." to the definition will not have any impact on the SHNPP or on radiological safety. By adding these words, it will allow us to use an actual measured H-3 concentration instead of a composite value. Technical Specifications allow us to use a composite value for the H-3 activity, although the actual measurement of what is actually being released is more accurate. This will not change the amount of H-3 being released, nor will it change the dose received by the public.

ODCM Change 3/6
Impact of Changes

Page 2-25, Table 2.1-4

An error in the calculation of the sensitivity of Fe-59 was discovered earlier in the year during the recalculation of the setpoints for continuous release monitors. The change in sensitivity will have minimum impact on the SHNPP as Fe-59 is not a substantial contributor to the setpoint, nor is Fe-59 frequently seen (6/200 releases).

Old Sensitivity - 1.09 E+09 cpm/uCi/cc
New Sensitivity - 1.26 E+08 cpm/uCi/cc