CP&L
A Progress Energy Company

JUN 25 2002

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REVISIONS TO PLANT EMERGENCY PROCEDURES

Ladies and Gentlemen:

In accordance with 10 CFR 50.54 (q) and 10 CFR 50, Appendix E, Section V, Carolina Power & Light (CP&L) Company is submitting revisions to Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2, plant emergency procedures. CP&L has evaluated the revisions, in accordance with 10 CFR 50.54 (q), and has determined that the changes do not decrease the effectiveness of the Radiological Emergency Response Plan; and the Plan, as changed, continues to meet the standards of 10 CFR 50.47 (b) and the requirements of 10 CFR 50, Appendix E. A list of the revised procedures is provided in Enclosure 1. A summary of the revisions is provided in Enclosure 2. Enclosure 3 contains copies of the revised procedures.

There are no regulatory commitments being made in this submittal. Please refer any questions regarding this submittal to Mr. Michael Alford, Supervisor – Emergency Preparedness, at (910) 457-2286.

Sincerely,

Edward T. O'Neil
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A045

TG-T/tg-t

Enclosures:

1. List of Revised Plant Emergency Procedures
2. Summary of Revisions
3. Copies of Revised Procedures

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ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REVISIONS TO PLANT EMERGENCY PROCEDURES

List of Revised Plant Emergency Procedures

Procedure	Revision	Effective Date	Title
0PEP-03.6.3	11	06/01/2002	Estimate of The Extent Of Core Damage Under Accident Conditions
0PEP-04.6	23	06/01/2002	Radiological Emergency Kit Inventories

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REVISIONS TO PLANT EMERGENCY PROCEDURES

Summary of Revisions

A. 0PEP-03.6.3, "Estimate of The Extent Of Core Damage Under Accident Conditions," Revision 11: Revised BNP reactor thermal power references in Exhibit 3.6.3-3 and Worksheet B1 from "2558" to "2923" to reflect power uprate on Unit 1 and differentiate between Unit 1 and Unit 2.

B. 0PEP-04.6, "Radiological Emergency Kit Inventories," Revision 23:

1. Corrected typographical and format errors in Attachment 3, "Technical Support Center Emergency Kit," and Attachment 4, "Emergency Operations Facility Emergency Kit."
2. Deleted references to environmental monitoring kit particulate respirators from Attachment 11, "Checklist for Respiratory Protection Equipment," due to elimination of the requirement for environmental monitoring teams to wear respiratory protection.

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REVISIONS TO PLANT EMERGENCY PROCEDURES

Copies of Revised Procedures

CP&L

CAROLINA POWER & LIGHT COMPANY
BRUNSWICK NUCLEAR PLANT

I
Information Use

PLANT OPERATING MANUAL

VOLUME XIII

PLANT EMERGENCY PROCEDURE

UNIT
0

0PEP-03.6.3

ESTIMATE OF THE EXTENT OF CORE DAMAGE UNDER ACCIDENT CONDITIONS

REVISION 11

TABLE OF CONTENTS

SECTION		PAGE
1.0	PURPOSE	4
2.0	REFERENCES	4
3.0	RESPONSIBILITIES	4
4.0	DEFINITIONS AND ABBREVIATIONS	4
5.0	GENERAL	4
6.0	INITIATING CONDITION(S)	6
7.0	PRECAUTIONS AND LIMITATIONS	6
8.0	SPECIAL TOOLS AND EQUIPMENT	7
9.0	PROCEDURE STEPS	8
10.0	DIAGRAMS AND ATTACHMENTS	10

EXHIBITS

3.6.3-1	Sequence of Analysis for Estimation of Core Damage	12
3.6.3-2	Relationships Between Isotopic Concentration in the Primary Coolant and the Extent of Core Damage in Reference Plant	13
3.6.3-3	BNP to Reference Plant Parameters	17
3.6.3-4	Core Inventory of Major Fission Products in a Reference Plant	19
3.6.3-5	Percent of Fuel Inventory Airborne in the Containment	20
3.6.3-6	Verification of PASS	21

ATTACHMENTS

Attachment A	Computer Inputs for the PASS Program	25
Attachment B	Inventory Correction Factor	26
Attachment C	Plant Parameter Correction Factors	27
Attachment D	Integration of Containment Atmosphere Radiation Measurement Into Core Damage Estimate	28

TABLE OF CONTENTS

SECTION		PAGE
WORKSHEETS		
Worksheet A1	Calculation of Isotopic Concentrations	29
Worksheet A2	Calculation of Inventory Correction Factor	30
Worksheet A3	Calculation of Normalized Isotopic Concentrations	31
Worksheet A4	Estimate of Fuel/Cladding Damage	32
Worksheet B1	Determination of Fuel Inventory Release Based on Containment Radiation Monitor Reading	33

1.0 PURPOSE

The purpose of this procedure is to define the analysis performed to assess the extent of core damage during accident conditions.

2.0 REFERENCES

2.1 Lin, C. C., Procedure for the Determination of the Extent of Core Damage Under Accident Conditions, NEDO-22215, 1982.

2.2 Letter and Attachment from Mr. D. K. Smith, Service Supervisor - Nuclear, General Electric to Mr. A. C. Tollison, Jr., General Manager, Brunswick Steam Electric Plant, dated November 9, 1979, Subject: Radiation Source Term Information.

2.3 Letter and Attachments from Mr. T. J. Dente, Chairman - BWR Owner's Group to Mr. D. G. Eisenhut, Licensing Director - USNRC, dated June 17, 1983, Subject: Transmittal of Generic Procedures for Estimation of Core Damage Using Postaccident Sampling System.

3.0 RESPONSIBILITIES

The Radiological Control Director (RCD) is responsible to the Site Emergency Coordinator (SEC) for determining the magnitude of potential radioactive releases to the environment. The Technical Assessment Director (TAD) and the Accident Assessment Team Leader (AATL) are responsible to ensure that results of this procedure are provided to the RCD and SEC.

The Technical Assessment Director and the Accident Assessment Team Leader should be familiar with this procedure and be available for consultation.

4.0 DEFINITIONS AND ABBREVIATIONS

None

5.0 GENERAL

5.1 This procedure is to be implemented by the Radiological Control Director whenever the potential for core damage exists and/or there exists a potential for radiological releases to the environment (e.g., Site Area or General Emergency).

5.0 GENERAL

5.2 This procedure provides information on inventories of reactor full-power radioisotopes in curies (based on cesium, noble gases, and iodines) and gives methods for comparing actual radioactive liquid and gaseous samples with expected activity levels after a reactor accident.

5.3 There are several other plant parameters which are measured in the BWR which can provide sufficient information to confirm the initial core damage estimate based on radionuclide measurements. Containment radiation level provides a measure of core damage, because it is an indication of the inventory of airborne fission products (i.e., noble gases, a fraction of the halogens, and a much smaller fraction of the particulates) released from the fuel to the containment.

5.4 Another significant parameter for the estimation of core damage is reactor vessel water level. This parameter is used to establish if there has been an interruption of adequate core cooling. Significant periods with the core uncovered, as evidenced by reactor vessel water level readings, would be an indicator of a situation where core damage is likely. Water level measurement would be particularly useful in distinguishing between bulk core damage situations caused by loss of adequate cooling to the entire core and localized core damage situations caused by a flow blockage in some portion of the core.

5.5 There are other parameters which may provide an indication that a core damage event has occurred. These are main steam line radiation level and reactor vessel pressure. The usefulness of main steam line radiation measurement is limited because the main steam line radiation monitors are downstream of the main steam isolation valves (MSIVs) and would be unavailable following vessel isolation. Reactor vessel pressure measurement would provide an ambiguous indication of core damage, because, although a high reactor vessel pressure may be indicative of a core damage event, there are many nondegraded core events which could also result in high reactor vessel pressure.

There are other measurements besides radionuclide measurements which are obtainable using the Post Accident Sampling System (PASS) which would further aid in estimating core damage. Detection of such elements in the reactor coolant as Sr, Ba, La, and Ru is evidence of fuel melting. These indications could be factored into the final core damage estimate.

6.0 INITIATING CONDITION(S)

A release has occurred or is occurring.

A General Emergency has been declared.

Fuel damage is suspected.

Chemistry has energized Heat Tracing for the PASS.

7.0 PRECAUTIONS AND LIMITATIONS

7.1 Summary of Method

Liquid and gaseous samples can be obtained from the Post Accident Sampling System (PASS)--Liquid from the reactor coolant and/or suppression pool and gaseous samples from the primary and/or secondary containment. The samples will be quantitatively analyzed on the appropriate equipment. The results of the above analysis, in addition to containment radiation level, and the core water level history, will be used in the estimation.

7.2 Limitations

7.2.1 Analysis of PASS samples for concentrations of Ba, Sr, La, and Ru and consideration of the relative amounts of fission products would indicate if any fuel melt has occurred.

7.2.2 The selection of a sample location should account for the type of event which will determine where the fission products will concentrate.

7.2 Limitations

7.2.3 The recommended sampling locations are as follows:

Gaseous

Event Type	Sample Location
Nonbreaks (e.g., MSIV)	Suppression pool atmosphere
Small breaks	Drywell (before depressurization); suppression pool atmosphere (after depressurization)
Large breaks (liquid or steam) in primary containment	Drywell
Large breaks outside primary containment	Suppression pool atmosphere

7.2.4 The recommended sampling location for liquid for all events is the jet pumps as long as there is sufficient reactor pressure (normally > 50 psig) to provide a sample from that location. If there is not sufficient reactor pressure to allow a sample to be taken from the jet pumps, the sample should be taken from the sample points on the RHR System.

7.2.5 If a jet pump liquid sample is requested at low (< 1%) power conditions for a small break or nonbreak event, recommend to Operations that the reactor water level be raised to the level of the moisture separators. This will fully flood the moisture separators and will provide a thermally induced recirculation flow path for mixing.

8.0 SPECIAL TOOLS AND EQUIPMENT

None

9.0 PROCEDURE STEPS

9.1 Evaluations of Liquid and Gaseous Samples

NOTE: An estimate of the extent of core damage can be determined by comparing the measured concentrations of major fission products in either the gas or water samples, after appropriate normalization, with the reference plant data.

9.1.1 The Radiological Controls Director should request samples from the PASS.

NOTE: Steps 9.1.2 through 9.1.6 can be accomplished using the PASS Program, a computer program on the Accident Assessment Team (AAT) computer. To use the program, a member of the AAT, preferably a Reactor Engineer, verifies proper operation of the program by running the test cases in Exhibit 3.6.3-6, Verification of PASS. These tests cases should be used to demonstrate the validity of the PASS Program each time the program is initially used. On successful completion of test cases, Attachment A, Computer Inputs for the PASS Program, is completed and the data is inputed to the PASS Program. The results are provided to the Technical Assessment Director or the Accident Assessment Team Leader.

9.1.2 Obtain the samples from the PASS and determine the concentration of the fission product i (C_{wi} in water or C_{gi} in gas) as determined in Attachment A for computer method or Worksheet A1 for manual method.

NOTE: Ensure that the measured gaseous activity concentration has been corrected for temperature and pressure difference in the sample vial and the containment (torus) gas phase. This is normally included in the quantitative analysis results.

9.1.3 Correct the measured concentration on Worksheet A1 for decay to the time of reactor shutdown.

9.1.4 Calculate the fission product inventory correction factor F_{Ii} per Attachment B and record on Worksheet A2.

9.0 PROCEDURE STEPS

9.1.5 Using the results from Worksheet A1 and A2 and the correction factors, listed on Attachments C, Calculate the normalized concentration, C_{wi}^{Ref} or C_{gi}^{Ref}, and record on Worksheet A3.

9.1.6 Use best estimate data from Exhibit 3.6.3-2 to estimate the extent of fuel or cladding damage using C_{wi}^{Ref} for Cs-137 and I-131 and C_{gi}^{Ref} for Xe-133 and Kr-85. Record data on Worksheet A4.

9.2 Application of Other Significant Parameters to Core Damage Estimate

Section 9.1 provides an estimate of core damage based on radionuclide measurements. Based on Step 9.1.6, an initial assessment of core damage is made. Based on a clarification provided by the NRC, that assessment would appear in a matrix as follows:

Degree of Degradation	Minor (< 10%)	Intermediate (10% - 50%)	Major (> 50%)
No fuel damage	1	1	1
Cladding failure	2	3	4
Fuel overheat	5	6	7
Fuel melt	8	9	10

As recommended by the NRC, there are four general classes of damage and three degrees of damage within each of the classes except for the "no fuel damage" class.

Consequently, there are a total of ten possible damage assessment categories. For example, Category 3 would be descriptive of the condition where between 10% and 50% of the fuel cladding has failed. Note that the conditions of more than one category could exist simultaneously. The objective of the final core damage assessment procedure is to narrow down, to the maximum extent possible, those categories which apply to the actual in-plant situation.

The initial core damage assessment based on radionuclide measurement will provide one or several candidate categories which most likely represent the actual in-plant condition. The other parameters should then be evaluated (as identified in Section 9) to corroborate and further refine the initial estimate.

9.0 PROCEDURE STEPS

For example, fission product measurement using PASS may indicate Category 4 core damage and, additionally, the potential for fuel overheat and fuel melt (i.e., Categories 5 through 10). Use of the containment radiation monitor reading along with the correlation provided in Attachment D would verify that a significant fission product release to the containment had occurred, further verifying the initial assessment.

Further analysis of the PASS samples for concentrations of Ba, Sr, La, and Ru and consideration of the relative amounts of fission products released would indicate if any fuel melt had occurred.

Exhibit 3.6.3-1 indicates how the analysis of the other significant parameters relates to the estimation of core damage based on radionuclide measurements.

9.3 Consult with the Technical Assessment Director or Accident Assessment Team Leader and the Radiological Control Director when results of this procedure are determined and repeat this procedure as necessary.

10.0 DIAGRAMS AND ATTACHMENTS

10.1 List of Exhibits

3.6.3-1 Sequence of Analysis for Estimation of Core Damage

3.6.3-2 Relationships Between Isotopic Concentration in the Primary Coolant and the Extent of Core Damage in Reference Plant

3.6.3-3 BNP to Reference Plant Parameters

3.6.3-4 Core Inventory of Major Fission Products in a Reference Plant

3.6.3-5 Percent of Fuel Inventory Airborne in the Containment

3.6.3-6 Verification of PASS

10.0 DIAGRAM AND ATTACHMENTS

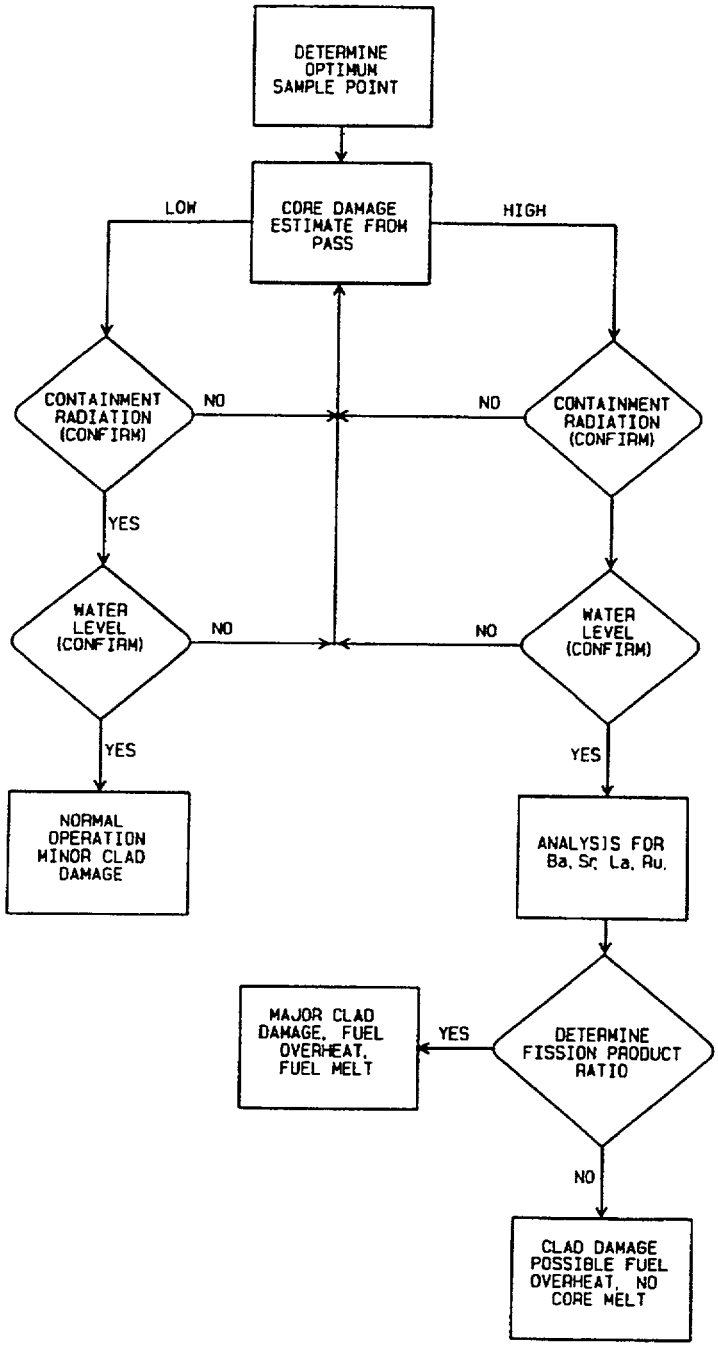
10.2 List of Attachments

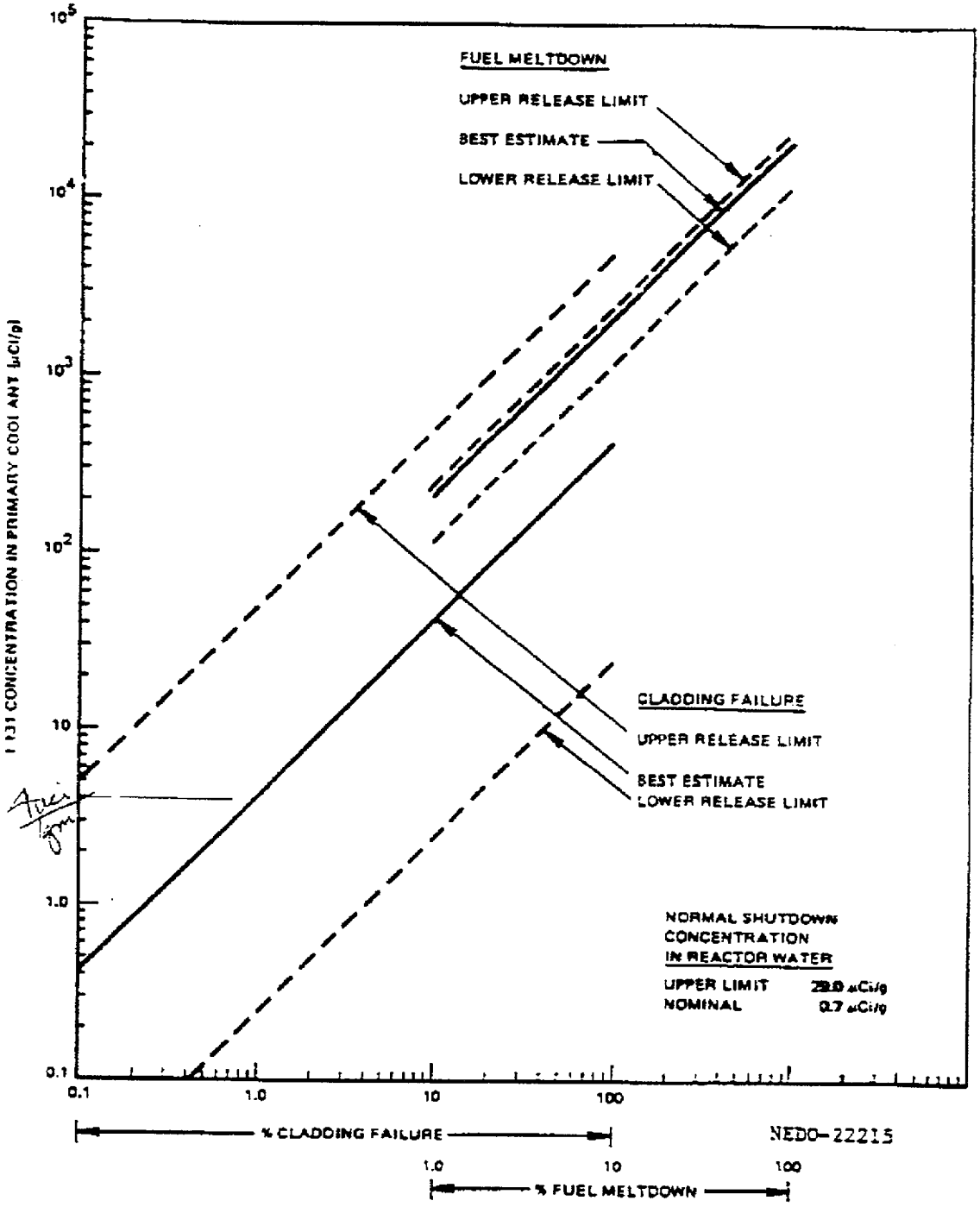
Attachment A	Computer Inputs for the PASS Program
Attachment B	Inventory Correction Factor
Attachment C	Plant Parameter Correction Factors
Attachment D	Integration of Containment Atmosphere Radiation Measurement Into Core Damage Estimate

10.3 List of Worksheets

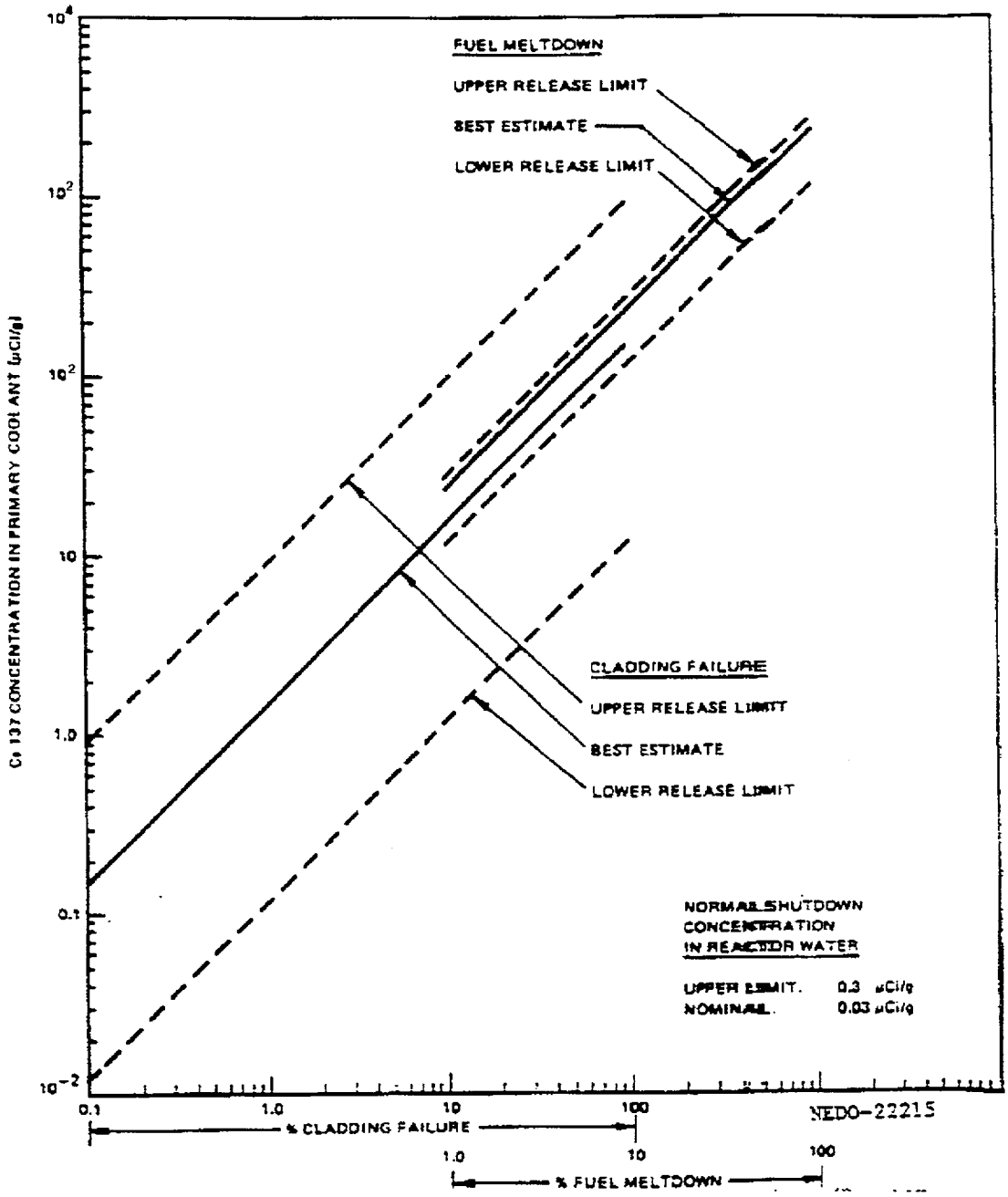
Worksheet A1	Calculation of Isotopic Concentrations
Worksheet A2	Calculation of Inventory Correction Factor
Worksheet A3	Calculation of Normalized Isotopic Concentrations
Worksheet A4	Estimate of Fuel/Cladding Damage
Worksheet B1	Determination of Fuel Inventory Release Based on Containment Radiation Monitor Reading

EXHIBIT 3.6.3-1
SEQUENCE OF ANALYSIS FOR
ESTIMATION OF CORE DAMAGE

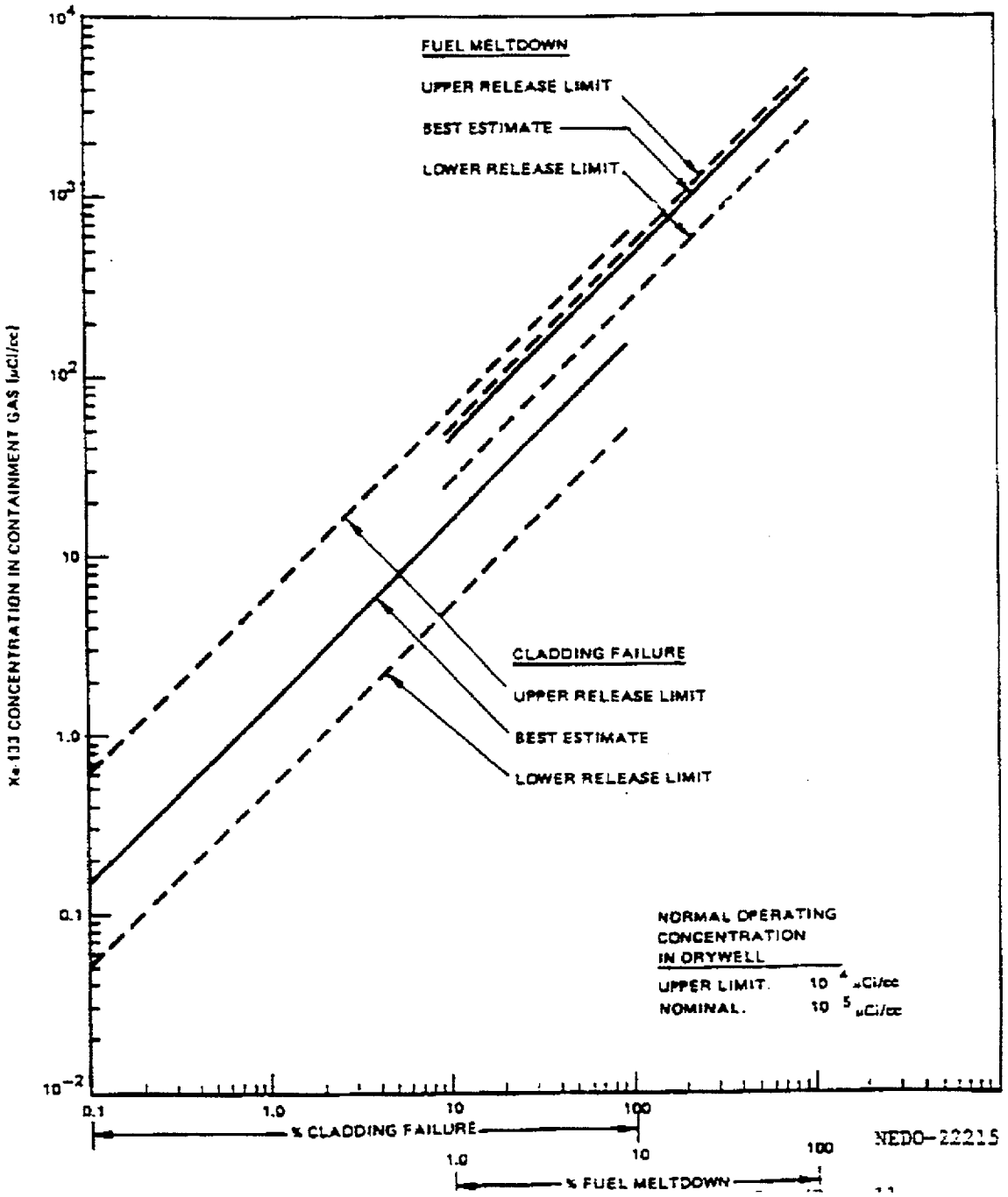




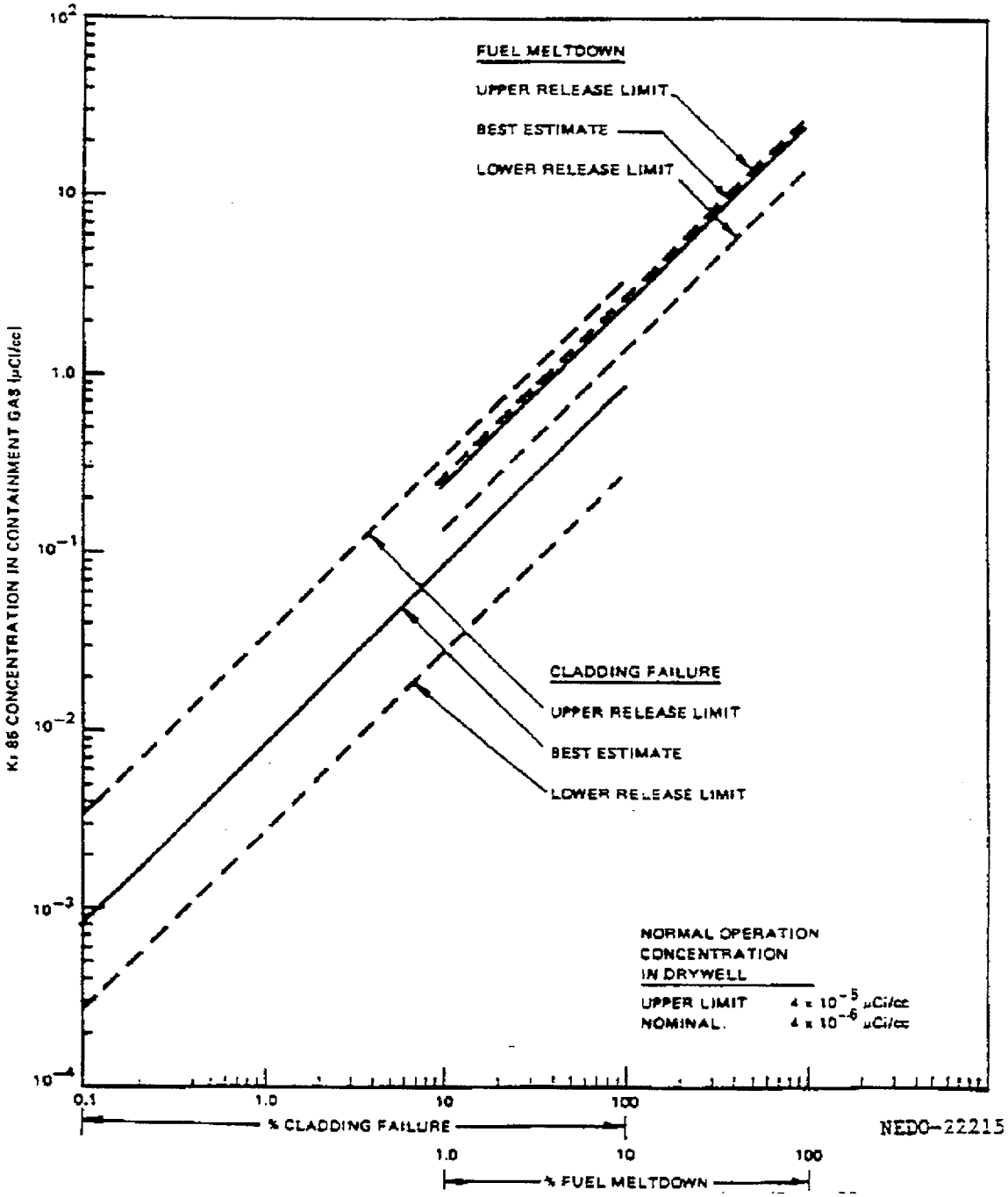
Relationship Between I-131 Concentration in the Primary Coolant (Reactor Water + Pool Water) and the Extent of Core Damage in Reference Plant



Relationship Between Cs-137 Concentration in the Primary Coolant (Reactor Water + Pool Water) and the Extent of Core Damage in Reference Plant



Relationship Between Xe-133 Concentration in the Containment Gas (Drywell Torus Gas) and the Extent of Core Damage in Reference Plant



Relationship Between Kr-85 Concentration in the Containment Gas (Drywell Torus Gas) and the Extent of Core Damage in Reference Plant

BNP TO REFERENCE PLANT PARAMETERS

Comparison With Reference Plant Data

The extent of core damage can be estimated from the measured fission product concentrations in either the gas or water samples, as described for the reference plant. However, the measured concentration must be corrected for the differences in operation power level, time of operation, primary coolant mass, and containment gas volume.

$$C_{wi}^{Ref} = C_{wi}\, e^{\lambda_i t} \times F_{Ii} \times F_w$$

OR

$$C_{gi}^{Ref} = C_{gi}\, e^{\lambda_i t} \times F_{Ii} \times F_g$$

C_{wi}^{Ref} = Concentration of isotope i in the reference plant coolant (µCi/g).

C_{gi}^{Ref} = Concentration of isotope i in the reference plant containment gas (µCi/cc).

C_{wi} = Measured concentration of isotope i in BNP's coolant (µCi/g) See Worksheet A1.

C_{gi} = Measured concentration of isotope i in BNP's containment gas (µCi/cc). See Worksheet A1.

$\lambda_i te$ = Decay correction to the time of reactor shutdown.

λi = Decay constant of isotope i (day^{-1}).

t = Time between the reactor shutdown and the sample time (days).

F_{Ii} = Inventory correction factor for isotope i. See Attachment B.

F_g = Containment gas volume correction factor. See Attachment C.

F_w = Primary coolant mass correction factor. See Attachment C.

BNP to Reference Plant Parameters

	Reference Plant	BNP
Reactor Thermal Power	3651 MWt	2923 MWt (Unit 1) 2558 MWt (Unit 2)
Number of Fuel Bundles	748 bundles	560 bundles
Total Primary Coolant Mass (reactor water plus suppression pool water)	3.92×10^9 g	2.69×10^9 g
Total Drywell and Torus Gas Space Volume	4.0×10^{10} cc	8.11×10^9 cc
Reactor Water	2.46×10^8 g	2.14×10^8 g
Suppression Pool	3.67×10^9 g	2.48×10^9 g
Drywell Gas Volume	7.77×10^9 cc	4.65×10^9 cc
Torus Gas Volume	3.25×10^{10} cc	3.46×10^9 cc

EXHIBIT 3.6.3-4

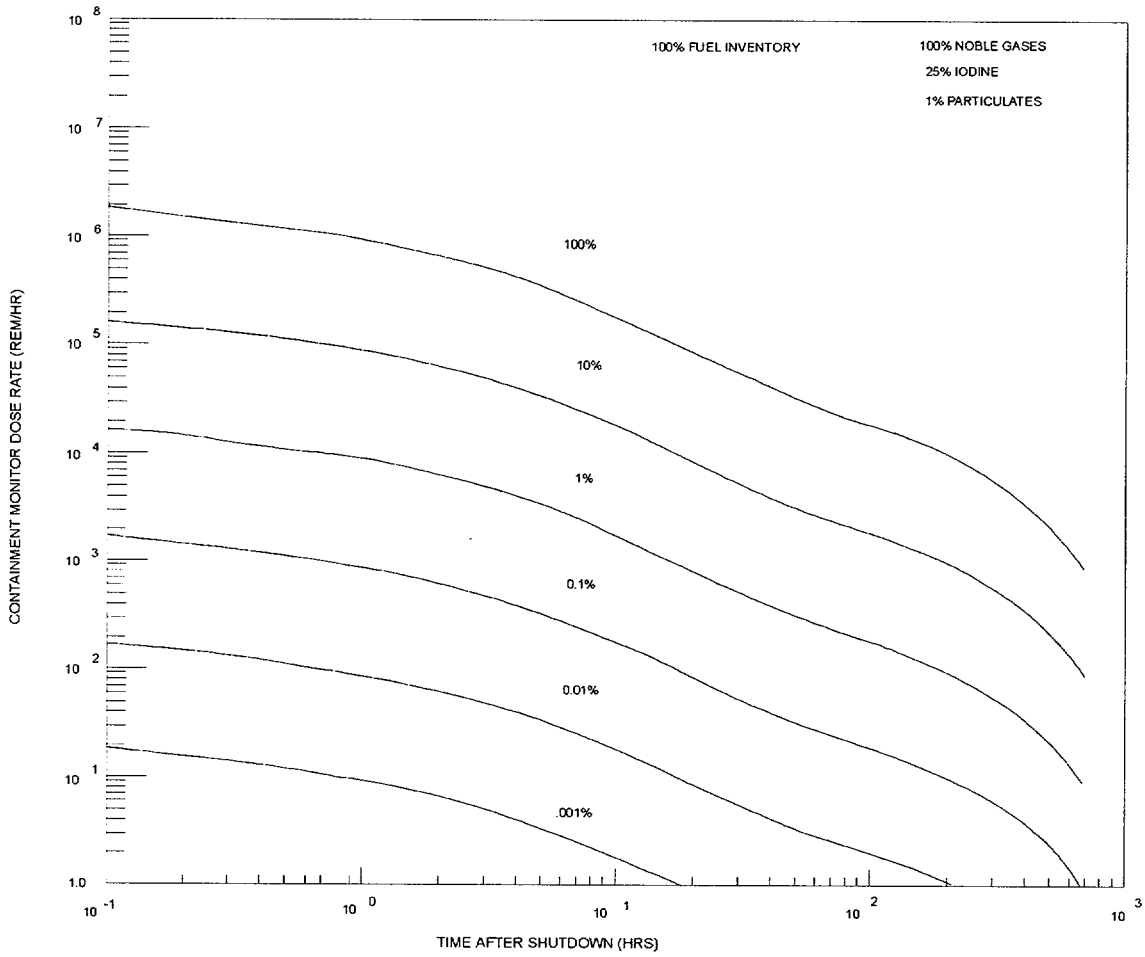
Core Inventory of Major Fission Products in a Reference Plant Operated at 3651 MWt for Three Years

Chemical Group	Isotope	Half-Life*	Inventory 10^6Ci	Major Gamma Ray Energy -Intensity - keV(γ/d)
Noble Gases	Kr-85m	4.48 h	24.6	151 (0.753)
	Kr-85	10.72 y	1.1	514 (0.0044)
	Kr-87	76.00 m	47.1	403 (0.495)
	Kr-88	2.84 h	66.8	196 (0.26), 1530 (0.109)
	Xe-133	5.25 d	202.0	81 (0.365)
	Xe-135	9.11 h	26.1	250 (0.899)
Halogens	I-131	8.04 d	96.0	364 (0.812)
	I-132	2.30 h	140.0	668 (0.99), 773 (0.762)
	I-133	20.80 h	201.0	530 (0.86)
	I-134	52.60 m	221.0	847 (0.954), 884 (0.653)
	I-135	6.59 h	189.0	1132 (0.225), 1260 (0.286)
Alkali Metals	Cs-134	2.06 y	19.6	605 (0.98), 796 (0.85)
	Cs-137	30.17 y	12.1	662 (0.85)
	Cs-138	32.20 m	178.0	463 (0.307), 1436 (0.76)
Tellurium Group	Te-132	78.00 h	138.0	228 (0.88)
Noble Metals	Mo-99	66.02 h	183.0	740 (0.128)
	Ru-103	39.40 d	155.0	497 (0.89)
Alkaline Earths	Sr-91	9.52 h	115.0	750 (0.23), 1024 (0.325)
	Sr-92	2.71 h	123.0	1384 (0.9)
	Ba-140	12.80 d	173.0	537 (0.254)
Rare Earth	Y-92	3.54 h	124.0	934 (0.139)
	La-140	40.20 h	184.0	487 (0.455), 1597 (0.955)
	Ce-141	32.50 d	161.0	145 (0.48)
	Ce-144	284.40 d	129.0	134 (0.108)
Refractories	Zr-95	64.00 d	161.0	724 (0.437), 757 (05.53)
	Zr-97	16.90 h	166.0	743 (0.928)

* h = hour
d = day
m = month
y = year

EXHIBIT 3.6.3-5

Percent of Fuel Inventory Airborne in the Containment



% Fuel Inventory **Released**	**Approximate Source and Damage Estimate**
100.00	100% TID-14844, 100% fuel damage, potential core melt.
50.00	50% TID noble gases, TMI source.
10.00	10% TID, 100% NRC gap activity, total clad failure, partial core uncovered.
3.00	3% TID, 100% WASH-1400 gap activity, major clad failure.
1.00	1% TID, 10% NRC gap, maximum 10% clad failure.
0.10	0.1% TID, 1% NRC gap, 1% clad failure, local heating of 5-10 fuel assemblies.
	0.01 0.01% TID, 0.1% NRC gap, clad failure of 3/4 fuel element (36 rods).
10^{-3}	0.01% NRC gap clad failure of a few rods.
10^{-4}	100% coolant release with spiking.
5×10^{-6}	100% coolant inventory release.
10^{-6}	Upper range of normal airborne noble gas activity in containment.

EXHIBIT 3.6.3-6
Verification Of PASS
(A Computer program for estimating core damage based on Postaccident Sampling System results)

This exhibit is intended to provide a means to ensure that PASS, a core damage estimate program designed for the IBM Personal Computer, is working properly. This is demonstrated by duplicating expected results of known computer inputs. These results can be validated by comparison to manual calculations for the same input.

Two different test cases are presented so that a number of alternate paths within the program can be tested. The test cases with their expected results follow.

TEST CASE 1

Computer Prompt	**Expected Input**
Enter The Concentration of the Fission Products	
Concentration of I-131 in Reactor Water (μCi/ml)	1.72E + 3
Concentration of I-131 in Suppression Pool (μCi/ml)	1.49E + 2
Concentration of Cs-137 in Reactor Water (μCi/ml)	6.55E + 2
Concentration of Cs-137 in Suppression Pool (μCi/ml)	5.70E + 1
Concentration of Xe-133 in Drywell (μCi/cc)	1.82E + 2
Concentration of Xe-133 in Torus (μCi/cc)	2.41E + 2
Concentration of Kr-85 in Drywell (μCi/cc)	1.43E + 0
Concentration of Kr-85 in Torus (μCi/cc)	1.90E + 0
For the inventory correction factor do you want to use the conservative default values which are bases upon BNP's operations under the same operational constraints (YES or NO)?	**YES**
Enter time between the reactor shutdown and the Sample Time (Days)	**2**

The results should resemble the printout on the following page. If they do not, carefully check your inputs and try the test again. If the results still are not similar, try a backup copy of the program. If that fails, then seek programming help.

Estimate the Extent of Core Damage Under Accident Conditions

DATE: 03-28-1984
TIME: 13:21:27

The concentration of the fission products are:

I-131 in Reactor Water	1.72E + 3 μCi/ml
I-131 in Suppression Pool	1.49E + 2 μCi/ml
Cs-137 in Reactor Water	6.55E + 2 μCi/ml
Cs-137 in Suppression Pool	5.70E + 1 μCi/ml
Xe-133 in Drywell Air	1.82E + 2 μCi/cc
Xe-133 in Torus Air	2.41E + 2 μCi/cc
Kr-85 in Drywell Air	1.43E + 0 μCi/cc
Kr-85 in Torus Air	1.90E + 0 μCi/cc

Time between the reactor shutdown and the sample time is: 2 days

The Conservative Default values of the Inventory Correction Factors were used.

Estimate of Fuel/Cladding Damage
Primary Coolant Analysis

Nuclide	CwREF (μCi/ml)	% Cladding Failure	% Fuel Meltdown
I-131	3.00E + 02	69.00	1.35
Cs-137	1.00E + 02	64.54	4.27

Containment Gas Analysis

Nuclide	CwREF (μCi/ml)	% Cladding Failure	% Fuel Meltdown
Xe-133	7.99E + 01	53.26	1.84
Kr-85	5.00E - 01	56.35	1.92

TEST CASE 2 **Computer Prompt**	**Expected Input**
Enter The Concentration of the Fission Products	
Concentration of I-131 in Reactor Water (μCi/ml)	1.35E + 3
Concentration of I-131 in Suppression Pool (μCi/ml)	1.18E + 2
Concentration of Cs-137 in Reactor Water (μCi/ml)	1.17E + 2
Concentration of Cs-137 in Suppression Pool (μCi/ml)	1.02E + 1
Concentration of Xe-133 in Drywell (μCi/cc)	1.84E + 2
Concentration of Xe-133 in Torus (μCi/cc)	2.45E + 2
Concentration of Kr-85 in Drywell (μCi/cc)	2.91E - 1
Concentration of Kr-85 in Torus (μCi/cc)	3.86E - 1
For the inventory correction factor do you want to use the conservative default values which are bases upon BNP's operations under the same operational constraints (YES or NO)?	NO
Enter time between the reactor shutdown and the Sample Time (Days)?	2
Enter number of Operating Periods from the unit operating history?	3
For period number (1) enter:	
Average steady reactor power operated in this period (MWT)?	1000
Duration of this operating period (days)?	60
Time between the end of this operating period and the time of the most recent reactor shutdown (days)?	254
For period number (2) enter:	
Average steady reactor power operated in this period (MWT)?	2000
Duration of this operating period (days)?	200
Time between the end of this operating period and the time of the most recent reactor shutdown (days)?	44
For period number (3) enter:	
Average steady reactor power operated in this period (MWT)?	3000
Duration of this operating period (days)?	14
Time between the end of this operating period and the time of the most recent reactor shutdown (days)?	0

The results should resemble the printout on the following page. If they do not, carefully check your inputs and try the test again. If the results still are not similar, try a backup copy of the program. If that fails, then seek programming help.

Estimate the Extent of Core Damage Under Accident Conditions

DATE: 03-28-1984
TIME: 13:27:17

The concentration of the fission products are:

I-131 in Reactor Water	1.35E + 3 μCi/ml
I-131 in Suppression Pool	1.18E + 2 μCi/ml
Cs-137 in Reactor Water	1.17E + 2 μCi/ml
Cs-137 in Suppression Pool	1.02E + 1 μCi/ml
Xe-133 in Drywell Air	1.84E + 2 μCi/cc
Xe-133 in Torus Air	2.45E + 2 μCi/cc
Kr-85 in Drywell Air	2.91E - 1 μCi/cc
Kr-85 in Torus Air	3.86E - 1 μCi/cc

Time between the reactor shutdown and the sample time is: 2 days

The Inventory Correction Factors were calculated from the following:

Period No.	Operation Time (days)	Time Between Period & Last Shutdown (days)	Average Power (MWt)
1	60	254	1000
2	200	44	2000
3	14	0	3000

Estimate of Fuel/Cladding Damage
Primary Coolant Analysis

Nuclide	CwREF (μCi/ml)	% Cladding Failure	% Fuel Meltdown
I-131	3.00E + 02	69.02	1.35
Cs-137	9.99E + 01	64.49	4.27

Containment Gas Analysis

Nuclide	CwREF (μCi/ml)	% Cladding Failure	% Fuel Meltdown
Xe-133	8.00E + 01	53.30	1.84
Kr-85	5.00E - 01	56.40	1.92

ATTACHMENT A
Page 1 of 1

Computer Inputs for the PASS Program

Concentration of I-131 in Reactor Water (μCi/ml) _____

Concentration of I-131 in Suppression Pool (μCi/ml)* _____

Concentration of Cs-137 in Reactor Water (μCi/ml) _____

Concentration of Cs-137 in Suppression Pool (μCi/ml)* _____

Concentration of Xe-133 in Drywell (μCi/cc) _____

Concentration of Xe-133 in Torus (μCi/cc)** _____

Concentration of Kr-85 in Drywell (μCi/cc) _____

Concentration of Kr-85 in Torus (μCi/cc)** _____

Time between Reactor Shutdown and Sample Time (days) _____

If time and availability permits, attach information necessary for the calculation of Inventory Correction Factors (see Attachment B); otherwise, conservative default correction factors will be used.

Accident Assessment Team Member: Enter data into PASS computer program and provide results to the Technical Assessment Director or the Accident Assessment Team Leader.

*If unavailable, assume suppression pool activity = 0 μCi/ml.
**If unavailable, assume torus concentration equal to drywell in μCi/cc.

Inventory Correction Factor

$$F_{Ii} = \frac{\text{inventory of nuclide i in reference plant}}{\text{inventory of nuclide i in operation plant}}$$

$$F_{Ii} = \frac{3651\left(1 - e^{-1095\lambda_i}\right)}{\sum_j \left[P_j \left(1 - e^{-\lambda_i T_j}\right) \left(e^{-\lambda_i T_{jo}}\right)\right]}$$

where:

P_j = average steady reactor power operated in period j (MWt).

T_j = duration of operating period j (day).

T_j^o = time between the end of operating period j and the time of the last reactor shutdown (day).

3651 = reference plant MWt.

If the unit operating history is not readily available, use the following F_I values (based upon Brunswick plant operations under the same operational constraints):

Nuclide	Conservative F_I	λ_i (day $^{-1}$)
I-131	1.34	0.0862
Cs-137	1.39	6.29×10^{-5}
Xe-133	1.46	0.1320
Kr-85	1.51	1.77×10^{-4}

Plant Parameter Correction Factors

$$F_w = \frac{\text{BNP total coolant mass } (2.69 \times 10^9 \text{ g})}{\text{reference plant coolant mass } (3.92 \times 10^9 \text{ g})}$$

= 0.68622

$$F_g = \frac{\text{BNP total containment gas volume } (8.11 \times 10^9 \text{ cc})}{\text{reference plant containment gas volume } (4 \times 10^{10} \text{ cc})}$$

= 0.20275

Integration of Containment Atmosphere Radiation Measurement Into Core Damage Estimate

An indication of the extent of core damage is the containment radiation level which is a measure of the inventory of fission products released to the containment. This attachment contains a correlation of the containment radiation monitor dose rate to the percent of fuel inventory airborne in the containment. The purpose of this attachment is to present that correlation and provide a method to use that correlation to determine the degree of core damage.

Exhibit 3.6.3-5 provides the results of a correlation performed for the Monticello plant. The key parameters which impact the containment dose rate are reactor power and containment volume.

The method whereby individual plants can apply this correlation is provided in Worksheet B1.

WORKSHEET A1
Page 1 of 1

Calculation of Isotopic Concentrations in Primary Water and Suppression Pool Water (Cw_i) and Drywell Gas and Torus Gas (Cg_i)

References

Section 9.1.2, 9.1.3
Attachment A
Exhibit 3.6.3-3

Date _____ and Time _____ of Reactor Shutdown
Date _____ and Time _____ of Sample
Time between reactor shutdown and sample time (days) _____

Cw_i (µCi/ml) = (Cs^{137}) [(Concentration Rx $H_20)_i$ (0.08) + (Concentration Suppression Pool $H_20)_i$ (0.92)] (decay correction factor)

(_____ + _____) (_____)

= _____ µCi/ml$_{Cs}^{137}$

Cw_i(µCi/ml) = (I^{131}) [(Concentration Rx $H_20)_i$ (0.08)] + (Concentration Suppression Pool $H_20)_i$ (0.92)] (decay correction factor)

(_____ + _____) (_____)

= _____ µCi/ml$_{I}^{131}$

Cg_i (µCi/cc) = (Xe^{133}) [(Concentration Drywell)$_i$ (0.57) + (Concentration Torus)$_i$ (0.43)] (decay correction factor)

(_____ + _____) (_____)

= _____ µCi/cc$_{Xe}^{133}$

Cg_i(µCi/cc) = (Kr^{85}) [(Concentration Drywell)$_i$ (0.57) + (Concentration Torus)$_i$ (0.43)] (decay correction factor)

(_____ + _____) (_____)

= _____ µCi/cc$_{Kr}^{85}$

WORKSHEET A2
Page 1 of 1
Calculation of Inventory Correction Factor (F_{Ii})

References

Section 9.1.4
Attachment B
Exhibit 3.6.3-4

P_j = _____ $MW_{thermal}$

T_j^o = _____ Days

T_j = _____ Days

λ_i = _____ $Days^{-1}$

$$F_{Ii} = \frac{3651\left(1 - e^{-1095\lambda_i}\right)}{\Sigma_j \left[P_j \left(1 - e^{-\lambda i Tj}\right) \left(e^{-\lambda i Tjo}\right)\right]}$$

= _____ (Cs^{137})

_____ (I^{131})

_____ (Xe^{133})

_____ (Kr^{85})

WORKSHEET A3
Page 1 of 1

Calculation of Normalized Isotopic concentrations in Primary Water and Suppression Pool Water (Cw_1^{Ref}) and Drywell Gas and Torus Gas (Cg_i^{Ref})

References

Section 9.1.5
Attachment C
Worksheet A1 (Cw_i and Cg_i)
Worksheet A2 (Fl_i)

NOTE: For BNP,
Fw = 0.68622
Fg = 0.20275

$Cw_i^{Ref} = Cw_i\, e^{\lambda it} \times Fl_i \times Fw$
(Cs^{137})

= _____ x _____ x _____

= _____ $\mu Ci/ml_{Cs}^{137}$

$Cw_i^{Ref} = Cw_i\, e^{\lambda it} \times Fl_i \times Fw$
(I^{131})

= _____ x _____ x _____

= _____ $\mu Ci/ml_I^{131}$

$Cg_i^{Ref} = Cg_i\, e^{\lambda it} \times Fl_i \times Fg$
(Xe^{133})

= _____ x _____ x _____

= _____ $\mu Ci/cc\ Xe^{133}$

$Cg_i^{Ref} = Cg_i\, e^{\lambda it} \times Fl_i \times Fg$
(Kr^{85})

= _____ x _____ x _____

= _____ $\mu Ci/cc\ Kr^{85}$

WORKSHEET A4
Page 1 of 1
Estimate of Fuel/Cladding Damage

References

Section 9.1.6
Exhibit 3.6.3-2
Worksheet A3

Primary Coolant Analysis

Isotope	Cw_i^{Ref}(μCi/ml)	% Cladding Failure	% Fuel Meltdown
I^{131}			
Cs^{137}			

Containment Gas Analysis

Isotope	Cg_i^{Ref}(μCi/ml)	% Cladding Failure	% Fuel Meltdown
Xe^{133}			
Kr^{85}			

WORKSHEET B1
Page 1 of 1

Determination of Fuel Inventory Release Based on Containment Radiation Monitor Reading

References

Section 9.2
Exhibit 3.6.3.5
Attachment D

The procedure for determination of fraction of fuel inventory released to the containment is as follows:

Step 1: Obtain containment radiation monitor reading, [R] in rem/hr.

Step 2: Determine elapsed time from plant shutdown to the containment radiation monitor reading [t] in hours.

Step 3: Using Exhibit 3.6.3-5, determine the fuel inventory release for the reference plant $[I]_{ref}$ in percent.

Step 4: Determine the inventory release to the containment [I] using the following formula:

$$[I] = [I]_{ref}\left(\frac{1670}{P}\right)\left(\frac{V}{237,450}\right) = ___\left(\frac{1670}{\begin{matrix}2923\ (Unit\ 1)\\ or\\ 2558\ (Unit\ 2)\end{matrix}}\right)\left(\frac{286,370}{237,450}\right) = ___\ \%$$

where:

P = reactor power level MW_{th} (BNP = 2923 MW_{th} - Unit 1).
= 2558 MW_{th} - Unit 2.

V = total containment free volume, ft^3 (BNP = 286,370 ft^3).

NOTE: Monitor location within the containment is assumed to have an insignificant impact on dose rate due to fuel inventory airborne in containment.

REVISION SUMMARY

Revision 11 of 0PEP-03.6.3 consists of the following changes:

- Revised BNP reactor thermal power references in Exhibit 3.6.3-3 and Worksheet B1 from "2558" to "2923" to reflect power uprate on Unit 1 and differentiate between Unit 1 and Unit 2.

PLANT OPERATING MANUAL

VOLUME XIII

PLANT EMERGENCY PROCEDURE

UNIT
0

0PEP-04.6

RADIOLOGICAL EMERGENCY KIT INVENTORIES

REVISION 23

TABLE OF CONTENTS

SECTION		PAGE
1.0	PURPOSE	3
2.0	REFERENCES	3
3.0	DEFINITIONS	3
4.0	RESPONSIBILITIES	4
4.1	Manager - E&RC	4
4.2	Supervisor - Emergency Preparedness	4
4.3	Superintendent - Operations Support	5
5.0	PROCEDURE	5
ATTACHMENTS		
1	Control Room Emergency Kit	7
2	Operational Support Center Emergency Kit	12
3	Technical Support Center Emergency Kit	16
4	Emergency Operations Facility Emergency Kit	22
5	PASS Sampling Emergency Kit	31
6	Environmental Monitoring Emergency Kit No. 1	32
7	Environmental Monitoring Emergency Kit No. 2	36
8	Dosher Hospital Emergency Kit	40
9	Vehicle Decon Kit	45
10	Notification to Reorder Potassium Iodide	48
11	Checklist for Respiratory Protection Equipment	49
12	Emergency Kit Replacements	52

1.0 PURPOSE

The Radiation Control group is responsible for ensuring that the emergency kits are maintained properly to provide necessary supplies and equipment during an emergency. This procedure provides the mechanism for validating the emergency kit inventories.

2.0 REFERENCES

2.1 HPS-NGGC-0013, Personnel Contamination Monitoring, Decontamination and Reporting

2.2 0E&RC-0220, Respiratory Protection Program

2.3 0PEP-03.7.6, Emergency Exposure Controls

2.4 0PEP-03.7.7, Onsite Radiological Controls

2.5 0PEP-03.9.2, First Aid and Medical Care

2.6 0PEP-03.9.3, Transport of Contaminated Injured Personnel

2.7 DOS-NGGC-0002, Dosimetry Issuance

2.8 DOS-NGGC-0009, Thermoluminescent Dosimeter (TLD) Badge Exchange

2.9 0FPP-039, SCBA Use and Maintenance

3.0 DEFINITIONS

3.1 Monthly

At least once per 31 days.

3.2 Quarterly

At least once per 92 days.

3.3 TSC

Technical Support Center

3.4 OSC

Operational Support Center

4.0 RESPONSIBILITIES

4.1 Manager - E&RC

4.1.1 The Manager of Environmental & Radiation Control is responsible for

KIT	LOCATION
Control Room Emergency Kit	Control Room
Operational Support Center Emergency Kit	O&M Bldg.
Technical Support Center Emergency Kit	TSC/EOF Building
Emergency Operations Facility Emergency Kit	TSC/EOF Building
PASS Sampling Emergency Kit	Service Building/ Chemistry Area
Environmental Monitoring Emergency Kit No. 1	EOF Rm 165
Environmental Monitoring Emergency Kit No. 2	EOF Rm 165
Dosher Hospital Emergency Kit	Dosher Hospital
Vehicle Decon Kit	LLRW Building

inventorying the emergency kits maintained at the following locations:

4.1.2 Each of these kits will be inventoried on a quarterly basis and following any emergency or drill in which the kit is utilized. The monitoring instruments, and dosimetry devices contained in the kits will be checked on a quarterly basis. The emergency breathing equipment (particulate respirators) contained in the kits will be checked on a monthly basis. Completion of this procedure's attachments provides the documentation of these inventories and checks.

4.2 Supervisor - Emergency Preparedness

The Supervisor - Emergency Preparedness should monitor this activity and shall ensure that it is performed at the prescribed frequency.

4.3 Superintendent - Operations Support

The Superintendent - Operations Support is responsible for inventory and maintaining SCBAs contained in the kits. The emergency breathing equipment (SCBAs) contained in the following kits will be checked on a monthly basis in accordance with 0FPP-039.

EMERGENCY KIT	KIT LOCATION	MINIMUM # SCBA UNITS
Control Room Kit	Control Room (2 in CAS)	15
TSC Kit	TSC/EOF Bldg Rm 141	10
EOF Kit	TSC/EOF Bldg Rm 135	15
OSC Kit	O&M Bldg 1st Floor	24
PASS Sampling Kit	Service Bldg / Chemistry Area	8

5.0 PROCEDURE

5.1 Record all inventory and equipment check results on Attachments 1 through 9 as required.

5.2 Complete Attachment 10 to reorder Potassium Iodide if the expiration date is less than eight months in the future.

5.3 Use Attachment 11 for monthly Respiratory Protection Equipment inspections. Attachments 1 through 9 are not to be used for inspections of breathing equipment.

5.4 Complete Attachment 12, Emergency Kit Replacements, to document equipment and supplies replaced in the Emergency Kits between required inspections.

5.5 Submit completed attachments to the Responsible Supervisor for review.

5.6 Notify the Supervisor - Emergency Preparedness immediately of any deficiencies found that are not easily corrected.

5.7 After review, transfer the original completed attachments to be filed in accordance with applicable records management instructions.

5.0 PROCEDURE

5.8 Notify the Supervisor - Emergency Preparedness when inventories have been completed.

5.9 Each time an inventory or equipment check is made, place a copy of each completed attachment with the respective emergency kit. (Old copies from previous inventories should be discarded.)

5.10 Upon completion of the monthly checks of the Emergency Breathing Equipment and quarterly inventories and checks, submit data necessary for updating the current computer schedule.

ATTACHMENT 1
Page 1 of 5
Control Room Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container Seals	Are all seals present on containers? Yes ___ No ___ *	
1	RM-14 with pancake type G-M probe or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	RO-2A or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Air Sampler with combination filter holder	#_____ Does it run? Yes ___ No ___ Calib. Due Date _____	
10	0-500 mR dosimeters (for special use)	Calib. Due Date _____**	
8	Dosimetry packages containing: 1 0-5 R self-reading dosimeter 1 0-200 R self-reading dosimeter	 Calib. Due Date _____** Calib. Due Date _____**	
10	TLDs (for special use)	Inventory and/or change out all TLDs in accordance with DOS-NGGC-0009, Thermoluminescent Dosimeter (TLD) Badge Exchange.	
1	Copy of DOS-NGGC-0002, Dosimetry Issuance	Current revision no.: _____	

*Inventory of containers must be checked.
**All dosimeters of the same range should be due for recalibration in the same month.

Control Room Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Case of potassium iodide (KI) tablets	Expiration date _____. (If expiration date is less than 8 months in the future, reorder KI tablets using Attachment 10.)	
10	Copies of 0PEP-03.7.6, Emergency Exposure Controls, Attachments 3 and 4	Current Revision No. _____.	
1	Copy of 0PEP-03.7.7, Onsite Radiological Controls.	Current Revision No. _____.	
10	Size X-large protective clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
15	Size large protective clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
5	Size medium protective clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
5	Size X-large disposable clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		

Control Room Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
15	Size large disposable clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
2	Rolls of duct tape		
*15	Scott air packs		
7	Full-face particulate respirators		
1	Dosimeter charger with batteries		
2	Boxes of charcoal cartridges		
5	Silver zeolite cartridges		
200	Planchets, 2"		
1	Smear holder slide tray		
500	Paper or cloth smears		
500	Coin envelopes		
2	Boxes of 47 mm particulate filters (sealed)		
10	Flashlights		
24	D-cell batteries		
12	9-volt transistor batteries		
12	C-cell batteries		
1	Check source (approximately 8μCi Cs-137)	# _____	
1	Roll of radiation rope		

*Two of the fifteen Scott air packs are stored in the Central Alarm Station (CAS).

Control Room Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
2	Rolls of radiation tape		
10	Insert style caution signs		
10	Inserts, "Radiation Area"		
10	Inserts, "High Radiation Area"		
10	Inserts, "Airborne Radioactivity"		
10	Inserts, "Contaminated Area"		
10	Adhesive labels, "Caution - Radioactive Materials"		
10	Adhesive labels, "Contaminated Waste"		
10	Step-off pads		
1	Roll of poly bags, small		
10	Poly bags, large		
5	Paper pads		
7	Pencils		
> 25	Ample supply of air survey forms		
> 25	Ample supply of radiological survey forms		
3	Clipboards		
1	Box of Ink pens		
N/A	All instruments were left in the Off Position		

Control Room Emergency Kit

MONTH/YEAR _____

NOTE: If deemed necessary to install a seal on the Control Room emergency kit cabinet, install a breakaway seal to ensure quick and easy access in the event of an emergency.

Initials

Seal all containers. _____

Submit data to update computer schedule. _____

Comments: _____

_____

_____

_____

Inventory Performed By:_____ Date:_____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

ATTACHMENT 2
Page 1 of 4
Operational Support Center Emergency Kit

MONTH/YEAR _____

NOTE: The radiation control equipment routinely stored in the Service Building is available for use in the Operational Support Center.

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container seals	Are all seals present on containers? Yes ___ No ___ *	
1	Air Sampler with combination filter holder	#_____ Does it run? Yes ___ No ___ Calib. Due Date _____	
3	RM-14 with pancake type G-M probe or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	

* Inventory of containers must be checked.

Operational Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
3	RO-2A or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
3	Teletector or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
1	RO-7 or Equivalent with low and mid-range detectors	#_____ Response Check Reading _____ Calib. Due Date _____	

* Inventory of containers must be checked.

Operational Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
50	Protective clothing packages -- each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
24	Scott Air Packs		
20	Full-face particulate respirators		
> 25	Ample supply of air survey forms		
3	Rolls of duct tape		
2	Boxes of 47 mm particulate filters (sealed)		
1	Box of charcoal filters		
1	Case of potassium iodide (KI) tablets	Expiration Date _____ (If the expiration date is less than 8 months in the future, reorder KI tablets using Attachment 10.)	
1000	Paper or cloth smears		
1000	Coin envelopes		
36	C-cell batteries		
12	9-volt transistor batteries		
2	30-volt batteries		

Operational Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Check source (approximately 8μCi Cs-137	# _____	
N/A	All instruments were left in the off position		

Initials

Seal all containers. _____

Submit data to update computer schedule. _____

Comments: _____

_____

_____

Inventory Performed By:_____ Date:_____
E&RC Technician

Reviewed By: _____ Date:_____
E&RC Supervisor or Designee

ATTACHMENT 3
Page 1 of 6
Technical Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container Seals	Are all seals present on containers? Yes___ No ___*	
3	RM-14 with pancake type G-M probe or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
1	Bicron Micro R or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	

* Inventory of containers must be checked.

Technical Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
3	RO-2A or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
1	R0-7 or Equivalent with low and mid-range detectors	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Air Sampler with combination filter holder	#_____ Calib. Due Date_____ Does it run? Yes___ No___	

* Inventory of containers must be checked.

Technical Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Continuous Air Monitor	#_____ Calib. Due Date_____ Does it run? Yes___ No___	
50	Check 0-500 mR self-reading dosimeters.	Calib. Due Date _____**	
10	Check 0-200 R self-reading dosimeters.	Calib. Due Date _____**	
50	TLDs	Inventory and/or change out all TLDs in accordance with DOS-NGGC-0009, Thermoluminescent Dosimeter (TLD) Badge Exchange.	
1	Copy of DOS-NGGC-0002, Dosimetry Issuance,	Current revision no.: _____.	
10	Copies of 0PEP-03.7.6, Emergency Exposure Controls, Attachments 3 and 4.	Current Revision No. _____	
1	Check source (approximately 8μCi Cs-137)	#_____	
4	Cases of potassium iodide (KI) tablets.	Expiration date _____. (If expiration date is less than 8 months in the future, reorder KI tablets using Attachment 10.)	
1	Copy of 0PEP-03.7.7, Onsite Radiological Controls.	Current Revision No. _____	

**All dosimeters of the same range should be due for recalibration in the same month.

Technical Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
10	Protective clothing packages – each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
3	Rolls of duct tape		
10	Full-face particulate respirators		
10	Scott air packs		
> 25	Ample supply of air survey forms		
> 25	Ample supply of radiological survey forms		
1000	Paper or cloth smears		
1000	Coin envelopes		
1	Dosimeter charger with batteries		
10	Inserts, "High Radiation Area"		
10	Inserts, "Airborne Radioactivity Area"		
10	Inserts, "Contaminated Area"		
10	Adhesive labels, "Radioactive Material"		

Technical Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
10	Inserts, "Radiation Area"		
10	Step-off pads		
10	Insert style caution signs		
2	Boxes of surgeon's gloves		
1	Roll of radiation rope		
5	Rolls of radiation tape		
1	Roll of sheet polyethylene		
1	Roll of poly bags, small		
1	Roll of poly bags, large		
2	Grease pencils		
1	Package of Decon cloths		
5	Pair of rubber gloves		
5	Pair of glove liners		
10	Pair of disposable coveralls (size X-large)		
10	Pair of plastic shoe covers		
2	Bottles of liquid soap		
2	Soft-bristle brushes		
2	Bottles of hand lotion with Lanolin		
12	D-cell batteries		
36	9-volt transistor batteries		
24	C-cell batteries		
2	30-volt batteries		

Technical Support Center Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Package of cotton swabs		
2	Boxes of tissues		
10	Bath towels		
2	Packages of disposable shoe covers		
2	Boxes of Charcoal filters		
2	Boxes of 47 mm Particulate filters (sealed)		
N/A	All instruments were left in the Off Position.		

Initials

Seal all containers. _____

Submit data to update computer schedule. _____

Comments: _____

_____

_____

_____

_____

Inventory Performed By:_____ Date:_____
E&RC Technician

Reviewed By: _____ Date:_____
E&RC Supervisor or Designee

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container Seals	Are all seals present on containers? Yes ___ No ___ *	
4	RM-14 with pancake type G-M probe or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
3	Bicron Micro R or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	

*Inventory of containers must be checked.

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
4	RO-2A or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
2	Teletector or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	

*Inventory of containers must be checked.

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
3	Air Sampler with combination filter holder	#_____ Does it run? Yes ___ No ___ Calib. Due Date _____	
		#_____ Does it run? Yes ___ No ___ Calib. Due Date _____	
		#_____ Does it run? Yes ___ No ___ Calib. Due Date _____	
80	Check 0-500 mR self-reading dosimeters.	Calib. Due Date _____**	
40	Check 0-5 R self-reading dosimeters.	Calib. Due Date _____**	
40	Check 0-200 R self-reading dosimeters.	Calib. Due Date _____**	
80	TLDs	Inventory and/or change out all TLDs in accordance with DOS-NGGC-0009, Thermoluminescent Dosimeter (TLD) Badge Exchange.	
1	Copy of DOS-NGGC-0002, Dosimetry Issuance	Current Revision No.: _____	
1	Continuous Air Monitor with combination holder	#_____ Calib. Due Date_____ Does it run? Yes___ No___	

**All dosimeters of the same range should be due for recalibration in the same month.

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
10	Copies of 0PEP-03.7.6, Emergency Exposure Controls, Attachments 3 and 4.	Current Revision No. _____	
1	Copy of HPS-NGGC-0013, Personnel Contamination, Monitoring, Decontamination, and Reporting	Current Revision No. _____.	
1	Copy of 0PEP-03.7.7, Onsite Radiological Controls	Current Revision No. _____.	
25	Protective clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
12	Rolls of duct tape		
16	Full-face particulate respirators		
> 25	Ample supply of air survey forms		
> 25	Ample supply of radiological survey forms		
1	Case of potassium iodide (KI) tablets	Expiration Date _____ (If the expiration date is less than 8 months in the future, reorder KI tablets using Attachment 10.)	

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
3000	Paper or cloth smears		
3000	Coin envelopes		
2	Dosimeter charger with batteries		
1	Check source (approximately 8μCi Cs-137)	# _____	
15	Scott air packs		
2	Boxes of particulate cartridges (respirator)		
10	Magic markers		
4	Rain suits		
20	Pads of paper		
36	9-volt transistor batteries		
10	Poly zip-lock bags		
2	Forceps		
2	Boxes of Charcoal cartridges (Air Sampler)	Due Date _____	
6	Boxes of surgeon's gloves		
6	Flashlights with batteries		
10	Silver zeolite cartridges	Due Date _____	
2	Boxes of 47 mm glass fiber filters		
1	Roll of radiation rope		
1	Roll of sheet polyethylene		

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Roll of poly bags, small		
1	Tool kit containing: a Phillips head screwdriver, a flat head screwdriver, and a 6" crescent wrench		
1	Roll of poly bags, large		
2	Boxes of Pens		
2	Rulers		
2	Extension cords, 50'		
1	Folding table		
1	Logbook		
1	Vacuum cleaner with absolute filter		
200	Planchets, 2"		
1	Smear holder slide tray		
10	Insert style caution signs		
10	Inserts, "Radiation Area"		
10	Inserts, "High Radiation Area"		
10	Inserts, "Airborne Radioactivity Area"		
10	Inserts, "Contaminated Area"		
10	Adhesive labels, "Caution Radiation Material"		

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
10	Step-off pads		
2	Grease pencils		
5	Clipboards		
2	Packs of Broom cloths		
36	C-cell batteries		
24	D-cell batteries		
1	55-gallon drum		
10	Pairs of rubber gloves		
10	Pairs of work gloves		
10	Pairs of glove liners		
5	Pairs of coveralls		
10	Pairs of plastic shoe covers		
1	Decon broom		
1	Box of laundry detergent		

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
2	Packages of potassium permanganate ($KMnO_4$)		
2	Gallon bottles of demineralized water		
2	Bottles of liquid soap		
3	Fisher Eradastain (or equivalent)		
2	Bars of hand soap		
2	Soft-bristle brushes		
2	Bottles of hand lotion with lanolin		
2	Packages of cotton swabs		
4	Boxes of tissue		
10	Cotton bath towels		
12	Disposable coveralls (X-large)		
4	Packages of disposable shoe covers		
1	50' water hose		
1	Hose adapter for connecting to rest room sink faucet		
N/A	All instruments were left in the Off Position.		

Emergency Operations Facility Emergency Kit

MONTH/YEAR _____

Initials

Seal all containers. _____

Submit data to update computer schedule. _____

Comments: _____

_____

Inventory Performed By: _____ Date: _____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

ATTACHMENT 5
Page 1 of 1
Pass Sampling Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
7	Check 0-200 R self-reading dosimeters.	Calib. Due Date _____**	
7	Multi-badge protective clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
2	Rolls of duct tape		
8	Scott air packs		
3	SCBA Speaker Phones	Check for satisfactory operation and battery corrosion.	
8	Extra air cylinders		

**All dosimeters of the same range should be due for recalibration in the same month.

Initials

Seal all containers. _____

Submit data to update computer schedule. _____

Comments: _____

_____

_____

Inventory Performed By: _____ Date: _____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

ATTACHMENT 6
Page 1 of 4

Environmental Monitoring Emergency Kit No. 1

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container Seals	Is seal present on door? Yes ___ No ___ *	
1	Air Sampler with combination filter holder	#_____ Does it run? Yes ___ No ___ Calib. Due Date _____	
1	Portable generator	Does it run? Yes___ No___ Is fuel available? Yes__ No__ Oil level - SAT___ UNSAT___	
2	Check 0-500 mR self-reading dosimeters.	Calib. Due Date _____**	
10	Check 0-5 R self-reading dosimeters.	Calib. Due Date _____**	
1	RO-2A or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Bicron Micro R Meter	#_____ Response Check Reading _____ Calib. Due Date _____	
1	RM-14 with pancake type G-M probe or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Teletector or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	

*Inventory of kit must be checked.
**All dosimeters of the same range should be due for recalibration in the same month.

Environmental Monitoring Emergency Kit No. 1

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
27	TLDs (2 for team members) (25 for environmental monitoring)	Inventory and/or change out all TLDs in accordance with DOS-NGGC-0009, Thermoluminescent Dosimeter (TLD) Badge Exchange.	
2	Bottles of potassium iodide (KI) tablets.	Expiration Date _____. (If the expiration date is less than 8 months in the future, reorder KI using Attachment 10.)	
2	Copies of 0PEP-03.7.6, Emergency Exposure Controls, Attachments 3 and 4.	Current Revision No. _____.	
1	Check source (approximately 8μCi Cs-137)	# _____	
20	Plastic petri dishes with covers		
20	Poly ziplock bags, small		
1	Box of surgeon's gloves		
1	Siren key		
10	Silver zeolite cartridges		
2	Magic markers		
1	Box of pens		
1	Box of 47 mm air sample filters		
5	Air sample charcoal cartridges		
1	Dosimeter charger with batteries		

Environmental Monitoring Emergency Kit No. 1

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Flashlight		
12	D-cell batteries		
12	9-volt transistor batteries		
12	C-cell batteries		
2	Rolls of duct tape		
2	Protective clothing packages		
1	Log book		
10	One-gallon collapsible sample bottles		
10	Shipping boxes for gallon sample bottles		
1	Funnel		
1	Hand shovel or trowel		
1	Large Tri-pour beaker (800 ml)		
1	Clipboard		
2	Pads paper		
50	Poly zip-lock bags, medium		
1	Portable 2 channel radio w/charger		
1	Pair of tweezers		
1	Map of local area		
1	Book - Brunswick County Maps		

Environmental Monitoring Emergency Kit No. 1

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
6	Bottles of drinking water		
N/A	All instruments were left in the Off Position.		

Initials

Seal kit. _____

Submit data to update computer schedule. _____

Comments: _____

_____

_____

_____

_____

Inventory Performed By: _____ Date: _____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

ATTACHMENT 7
Page 1 of 4
Environmental Monitoring Emergency Kit No. 2

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container Seals	Is seal present on door? Yes ___ No ___ *	
1	Air Sampler with combination filter holder	#_____ Does it run? Yes ___ No ___ Calib. Due Date _____	
1	Portable generator	Does it run? Yes___ No___ Is fuel available? Yes__ No__ Oil level - SAT___ UNSAT___	
2	Check 0-500 mR self-reading dosimeters.	Calib. Due Date _____**	
10	Check 0-5 R self-reading dosimeters.	Calib. Due Date _____**	
1	RO-2A or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Bicron Micro R Meter	#_____ Response Check Reading _____ Calib. Due Date _____	
1	RM-14 with pancake type G-M probe or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Teletector or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	

*Inventory of kit must be checked.
**All dosimeters of the same range should be due for recalibration in the same month.

Environmental Monitoring Emergency Kit No. 2

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
27	TLDs (2 for team members) (25 for environmental monitoring)	Inventory and/or change out all TLDs in accordance with DOS-NGGC-0009, Thermoluminescent Dosimeter (TLD) Badge Exchange.	
2	Bottles of potassium iodide (KI) tablets.	Expiration Date _____. (If the expiration date is less than 8 months in the future, reorder KI using Attachment 10.)	
2	Copies of 0PEP-03.7.6, Emergency Exposure Controls, Attachments 3 and 4.	Current Revision No. _____.	
1	Check source (approximately 8μCi Cs-137)	# _____	
20	Plastic petri dishes with covers		
20	Poly ziplock bags, small		
1	Box of surgeon's gloves		
1	Siren key		
10	Silver zeolite cartridges		
2	Magic markers		
1	Box of pens		
1	Box of 47 mm air sample filters		
5	Air sample charcoal cartridges		
1	Dosimeter charger with batteries		

Environmental Monitoring Emergency Kit No. 2

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Flashlight		
12	D-cell batteries		
12	9-volt transistor batteries		
12	C-cell batteries		
2	Rolls of duct tape		
2	Protective clothing packages		
1	Log book		
10	One-gallon collapsible sample bottles		
10	Shipping boxes for gallon sample bottles		
1	Funnel		
1	Hand shovel or trowel		
1	Large Tri-pour beaker (800 ml)		
1	Clipboard		
2	Pads paper		
50	Poly zip-lock bags, medium		
1	Portable 2 channel radio w/charger		
1	Pair of tweezers		
1	Map of local area		
1	Book - Brunswick County Maps		

Environmental Monitoring Emergency Kit No. 2

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
6	Bottles of drinking water		
N/A	All instruments were left in the Off Position.		

Initials

Seal kit. _____

Submit data to update computer schedule. _____

Comments: _____

_____

_____

_____

_____

Inventory Performed By: _____ Date: _____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

Dosher Hospital Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container Seals	Are all seals present on containers? Yes ___ No ___ *	
3	RM-14 with pancake type G-M probe or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
1	RO-2 or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Air Sampler with combination filter holder	#_____ Does it run? Yes___ No ___ Calib. Due Date _____	
20	Check 0-500 mR dosimeters	Calib. Due Date _____**	
5	Check Five (5) 0-5 R Dosimeters.	Calib. Due Date _____**	
5	Check Five (5) 20 R Dosimeters.	Calib. Due Date _____**	

*Inventory of containers must be checked.
**All dosimeters of the same range should be due for recalibration in the same month.

Dosher Hospital Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
20	TLDs	Inventory and/or change out all TLDs in accordance with DOS-NGGC-0009.	
1	Copy of DOS-NGGC-0002	Current Revision No. _____.	
1	Copy of 0PEP-03.9.2, First Aid and Medical Care	Current Revision No. _____.	
1	Copy of HPS-NGGC-0013, Personnel Contamination Monitoring, Decontamination, and Reporting	Current Revision No._____ .	
1	Copy of 0PEP-03.9.3, Transport of Contaminated Injured Personnel.	Current Revision No._____ .	
10	Disposable clothing packages--each containing coveralls, shoe covers, gloves, waterproof shoe covers, and head cover		
1	Utility knife		
5	Rolls of duct tape		
1	HEPA filtration unit ≥ 250 scfm		
1	Dosimeter charger with batteries		
1	Check source (approximately 8 μCi Cs-137)	# _____	

Dosher Hospital Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Storage receptacle		
1	Decon broom		
1	Smear holder slide tray		
1	Roll of sheet polyethylene		
1	Roll of yellow poly bags		
2	Five-gallon poly buckets		
1	Pair of tweezers		
2	Magic markers		
1	Box of Pens		
1	Clipboard		
> 25	Ample supply of radiological survey forms		
> 25	Ample supply of air survey forms		
500	Paper or cloth smears		
500	Coin envelopes		
50	Planchets, 2"		
2	Boxes of surgeon's gloves		
10	Step-off pads		
4	Packages of Broom cloths		
1	Box of tissues		
1	Pair of scissors		
2	Rolls of radiation tape		
1	Roll of radiation rope		
10	Insert style caution signs		
5	Large yellow poly bags		

Dosher Hospital Emergency Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
10	Inserts, "Keep Out"		
10	Inserts, "Radiation Area"		
10	Inserts, "High Radiation Area"		
10	Inserts, "Radioactive Material Area"		
50	Adhesive labels, "Caution Radioactive Material"		
12	9-volt transistor batteries		
12	D-cell batteries		
12	C-cell batteries		
8	Stanchions		
10	Charcoal filter cartridges		
2	Boxes of 47 mm Particulate Filters (sealed)		
N/A	All instruments were left in the Off Position		

Dosher Hospital Emergency Kit

	Initials
Seal all containers.	_____
Submit data to update computer schedule.	_____

Comments: _____

_____

_____

_____

_____

Inventory Performed By: _____ Date: _____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

Vehicle Decon Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
N/A	Container Seals	Are all seals present on containers? Yes ___ No ___ *	
2	RM-14 with pancake type G-M probe or E+quivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
		#_____ Response Check Reading _____ Calib. Due Date _____	
1	Bicron Micro R or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	RO-2A or Equivalent	#_____ Response Check Reading _____ Calib. Due Date _____	
1	Check source (approximately 8μCi Cs-137)	# _____	
1	Copy of 0PEP-03.7.7, Onsite Radiological Controls	Current Revision No._____	
300	Feet water hose		
2	Water hose nozzle		
1	Decon towels		
1	Case soap, liquid		
4	5 gallon plastic buckets		
6	Scrub brush		
1	Case maslin cloth		

*Inventory of containers must be checked.

Vehicle Decon Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Roll radiation rope		
25	Plastic step-off pad		
20	Insert style caution signs (3 pocket)		
20	"Contaminated Area" inserts		
20	"Radioactive Material" inserts		
15	"Enter @ SOP" inserts		
12	Stanchions		
1	Roll green Herculite (or equivalent)		
1	Roll yellow Herculite (or equivalent)		
10	PC sets (coveralls, plastic booties, rubber boots, cotton liners, rubber gloves, head cover (hood), rainsuit, face shield, tape		
2	RM-14 smear counter holder		
2	Spare HP 210 probes		
2000	Paper or cloth smears		
2000	Coin envelopes		
150	Feet 110 V elec. extension cord		
> 25	Ample supply of Radiological Survey Forms		
20	Mop heads		
2	Mop handles		

Vehicle Decon Kit

MONTH/YEAR _____

Minimum Quantity	Equipment/Supplies	Remarks	Verified (Initial)
1	Mop bucket w/wringer		
1	110 V elec. water pump w/10' suction and 20' discharge hoses		
5	55 gallon drums w/lids, rings, bolts (or equivalent)		
1	15/16" socket wrench		
20	Large plastic bags - yellow		
10	Black ink pens		
5	Black marker pens		
12	9-volt transistor batteries		
12	D-cell batteries		
12	C-cell batteries		
2	Flashlight w/spare batteries		
N/A	All instruments were left in the Off Position.		

Initials

Seal all containers. _____

Submit data to update computer schedule. _____

COMMENTS_____

_____

_____

Inventory Performed By: _____ Date: _____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

ATTACHMENT 10
Page 1 of 1

Notification to Reorder Potassium Iodide

Brunswick Nuclear Plant

Date: _____

MEMORANDUM TO: Supervisor - Emergency Preparedness

FROM: E&RC Supervisor

SUBJECT: Expiration of Potassium Iodide (KI)

This letter is notifying you that the Potassium Iodide in Emergency Kit(s) is going to expire as follows:

KIT	DATE	QUANTITY

This is your official notification to reorder an appropriate quantity of Potassium Iodide.

_____
E&RC Technician

_____
E&RC Supervisor

Checklist for Respiratory Protection Equipment

MONTH/YEAR _____

Initials

1. Control Room Kit

   a. Check seven (7) particulate respirators (1 small, 5 medium, 1 large) and update the inspection tags.

   Resp. (S) #_____ Resp. (M) #_____

   Resp. (M) #_____ Resp. (M) #_____

   Resp. (M) #_____ Resp. (L) #_____

   Resp. (M) #_____ _____

2. Technical Support Center Kit

   a. Check ten (10) particulate respirators (1 small, 8 medium, 1 large) and update the inspection tags.

   Resp. (S) #_____ Resp. (M) #_____

   Resp. (M) #_____ Resp. (M) #_____

   Resp. (M) #_____ Resp. (M) #_____

   Resp. (M) #_____ Resp. (M) #_____

   Resp. (M) #_____ Resp. (L) #_____ _____

Checklist for Respiratory Protection Equipment

MONTH/YEAR _____

Initials

3. Emergency Operations Facility Kit

a. Check sixteen (16) particulate respirators (1 small, 14 medium, 1 large) and update the inspection tags.

Resp. (S) #_____ Resp. (M) #_____

Resp. (M) #_____ Resp. (M) #_____

Resp. (M) #_____ Resp. (M) #_____

Resp. (M) #_____ Resp. (M) #_____

Resp. (M) #_____ Resp. (M) #_____

Resp. (M) #_____ Resp. (M) #_____

Resp. (M) #_____ Resp. (M) #_____

Resp. (M) #_____ Resp. (L) #_____ _____

Checklist for Respiratory Protection Equipment

MONTH/YEAR _____

Initials

4. Operational Support Center Kit

a. Check twenty (20) particulate respirators (1 small, 17 medium, 2 large) and update the inspection tags.

Resp. (S) #_____	Resp. (M) #_____	Resp. (M) #_____	
Resp. (M) #_____	Resp. (M) #_____	Resp. (M) #_____	
Resp. (M) #_____	Resp. (M) #_____	Resp. (M) #_____	
Resp. (M) #_____	Resp. (M) #_____	Resp. (M) #_____	
Resp. (M) #_____	Resp. (M) #_____	Resp. (L) #_____	
Resp. (M) #_____	Resp. (M) #_____	Resp. (L) #_____	
Resp. (M) #_____	Resp. (M) #_____		_____

Performed By: _____ Date _____
E&RC Technician

Reviewed By: _____ Date _____
E&RC Supervisor or Designee

ATTACHMENT 12
Page 1 of 1
Emergency Kit Replacements

Model	Serial #	Location	Perf. Test SAT	Perf. Test UNSAT	Source Used	Calib. Due Date	Remarks

Note: Kits must be resealed after equipment is replaced.

Comments:

Performed By: _____ Date: _____
E&RC Technician

Reviewed By: _____ Date: _____
E&RC Supervisor or Designee

REVISION SUMMARY

Revision 23 of 0PEP-04.6 consists of the following:

- Corrected typographical and format errors in Attachment 3, Technical Support Center Emergency Kit, and Attachment 4, Emergency Operations Facility Emergency Kit.

- Deleted references to environmental monitoring kit particulate respirators from Attachment 11, Checklist for Respiratory Protection Equipment, due to elimination of requirement for environmental monitoring team members to wear respiratory protection.