

# TECHNICAL REVIEW AND CONTROL

## SUMMARY

DOCUMENT No. ODCM UNIT 1 Rev. No. 8 \*Prd Rev, NC

TITLE OFFSITE DOSE CALCULATION MANUAL

Author By The Manufacturer ONLY

Description of Changes (Indicate the nature/reason of general changes)

\* CHANGED LIQUID AND GASEOUS DOSE EQUATIONS TO <sup>BE CONSISTENT</sup> WITH NUREG-0133 AND REGULATORY GUIDE 1.109.

\* ADDED PLUME SHINE TO THE DOSE CALCULATIONS TO REPLACE OLD IMMERSION DOSE METHODOLOGY

\* ADDED EMERGENCY CONDENSED VENT LIQUID AND GASEOUS EQUATIONS.

MODIFICATION RELATED CHANGES YES  NO  NON CONTROL NO

\* IF PERIODIC REVIEW WITH NO CHANGES (Prd Rev, NC), USE THE LAST PUBLISHED REVISION NUMBER AND CONTINUE REVIEW PROCESS.

### INTRADISCIPLINARY REVIEW (minimum of one person required)

| DEPT. NAME | TITLE          | SIGNATURE     | DATE   |
|------------|----------------|---------------|--------|
| Chem       | Chem. RC. Supv | John J. Blunt | 4/3/90 |

### CROSS DISCIPLINARY REVIEW (if not required, use lines for justification statement)

| DEPT. NAME                        | TITLE                | SIGNATURE        | DATE   |
|-----------------------------------|----------------------|------------------|--------|
| Env. Protection                   | Mgr. Env. Protection | J. J. Alavaugh   | 4/3/90 |
| (Gaseous Tables Only) Rad Support | Radiation Engineer   | Donald W. Miller | 4/3/90 |
| (IMPELL) CHEMISTRY                | TECHNICAL SPECIALIST | James M. Torres  | 4/3/90 |

IF NOT IN CONCURRENCE, DO NOT SIGN BUT RETURN DOCUMENT TO THE AUTHOR WITH COMMENTS

Routed to Quality Assurance for review: Yes  No  If No, reason \_\_\_\_\_

Q. A. Representative W. B. Julia Date 4/3/90 & comments are attached.

Routed to A.L.A.R.A. for review: Yes  No  If No, reason \_\_\_\_\_

A.L.A.R.A. Representative K. Rowe Date 4/3/90 & comments are attached.

SAFETY ANALYSIS REQUIRED: NO  YES  (SEE ATTACHED)  
IF YES, ANALYSIS ASSIGNED TO: SITE  OR TO ENGINEERING  DATE \_\_\_\_\_

REVIEW OF THE SUBJECT DOCUMENT HAS BEEN COMPLETED AND APPROVAL IS RECOMMENDED. (Approvers shall signify approval on the procedure cover sheet) . . .

DOCUMENT HELD FOR SORC (MEETING = 90-037). APPROVED, YES  NO .

OWNERSHIP DEPT SUPV Nick Spagnoli DEPT Nuc. Tech. DATE 4/12/90

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TECHNICAL REVIEW AND CONTROL

EVALUATION OF NEED FOR SAFETY ANALYSIS IN ACCORDANCE WITH 10 CFR 50.59

(Documents that require General Supt. approval per Tech Spec 6.8)

FOR DOCUMENT NO. OCM 11-1 REV. 8 DATE 4/3/90

The Author (A) and four SORC Members (Minimum - 2 regular members, 2 alternates) are to respond to each of the questions below.

|   |                                       | NO                       | YES*                     |
|---|---------------------------------------|--------------------------|--------------------------|
| Does the document/revision result in a change to the facility or procedures described in the FSAR?  | A <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 1 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 2 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 3 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 4 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the document/revision deviate from compliance to Tech Specs, or is the margin of safety defined in the basis reduced?  | A <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 1 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 2 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 3 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 4 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the document/revision increase the probability of occurrence, or the consequences of an accident, or malfunction of equipment important to safety (Class 1) evaluated in the FSAR increased? | A <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 1 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 2 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 3 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 4 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
| Does the document/revision create the possibility for an accident or malfunction of a different type than any evaluated in the FSAR?  | A <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 1 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 2 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 3 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |
|   | 4 <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/> |

\*A "MAYBE" constitutes a "YES" response.

SORC MEMBERS RECOMMENDATIONS TO GENERAL SUPERINTENDENT

|  |                            |                            |                            |                            |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| Recommend Nuclear Engineering or Tech Services perform a safety ANALYSIS to present to SORC (noted by a "YES" response to any of the above questions). | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Recommend full SORC committee review this Evaluation of need for Safety Analysis.  | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 4 <input type="checkbox"/> |
| Recommend approval - This document does not involve an unreviewed safety question.   | <u>1</u>                   | <u>2</u>                   | <u>3</u>                   | <u>4</u>                   |
|  | <u>/</u>                   | <u>/</u>                   | <u>/</u>                   | <u>/</u>                   |

SORC Member Signatures

Date 4/3/90

1 \_\_\_\_\_  
 2 See SORC meeting  
 3 \_\_\_\_\_  
 4 \_\_\_\_\_

SORC meeting number (if required)  
90-037

Figure 2.0-2 SH 2 OF 4

4/3/90

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# TECHNICAL REVIEW AND CONTROL REFERENCE DOCUMENTS

The items entered below have been included in the preparation and/or review of the attached reference document and are presented in place of a specific check sheet for the document.

The following persons were consulted about this procedure

| NAME          | TITLE                               | BY  |
|---------------|-------------------------------------|-----|
| John Blasiak  | Chem. & Radiochem Supervisor        | EDT |
| Hugh Flanagan | Environmental Manager               | EDT |
| Gary Correll  | Unit 1 Chem. & Radiochem Supervisor | EDT |
| Geri Wilkes   | Rad. Engr                           | EDT |
| Jim Towner    | Impul Tech. Specialist              | EDT |

Procedure is in compliance with the following Technical Specifications

| SECTION         | AMENDMENT | BY  |
|-----------------|-----------|-----|
| 3-6.14 + 4.6.14 | 66/94     | EDT |
| 3-6.15 + 4.6.15 | 66/94     | EDT |
| 3-6.16 + 4.6.16 | 66        | JF  |

Compliance with: CFR / US-NRC REGULATORY GUIDES(s) DATED BY

|                        |  |     |
|------------------------|--|-----|
| REGULATORY GUIDE 1.109 |  | EDT |
| NUREG-0.133            |  | EDT |
| REGULATORY GUIDE 1.113 |  |     |

Compliance with ANSI STANDARD(s) DATED BY

|      |  |  |
|------|--|--|
| NIIX |  |  |
|      |  |  |
|      |  |  |

Compliance with: ASME Boiler and Pressure Vessel Code(s)

| SECTION | DATE | ADDENDUM | BY |
|---------|------|----------|----|
| N/A     |      |          |    |
|         |      |          |    |
|         |      |          |    |

is consistent with the following Station or Site procedures:

| NUMBER                         | REV. | BY  |
|--------------------------------|------|-----|
| NI-CSP-M350 (N.G.)             |      | EDT |
| NI-CSP-M351 (EDDING, H'S, P&S) |      | EDT |
| NI-CSP-Q308 (SETPOINTS)        |      | EDT |

OTHER INFORMATION

| SOURCES CONSULTED                             | BY  |
|---|-----|
| ANALYTICAL CHEMISTRY TRAINING COURSE N&H, PA. | EDT |
|   |     |
|   |     |

AUTHOR Beth Thomas DATE 4-3-90  
 REVIEWED BY John Thomas DATE 4/3/90

COMMENTS

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# TECHNICAL REVIEW AND CONTROL REVIEW CHECK LIST

TO BE PREPARED BY AUTHOR

CHECK LIST FOR DOCUMENT NO. ODCM UNIT 1 REV. 8 DATE 4-3-90

**"✓" ONLY BOXES THAT APPLY**

|   | YES                                 | NA                                  |
|---|-------------------------------------|-------------------------------------|
| All references needed to implement the procedure are clearly identified and available.....  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| The procedure contains adequate equipment lists, precautions and limitations, prerequisites, graphs, diagrams or data sheets as required..... | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Surveillance and Maintenance Procedure utilizes PLANT IMPACT statement associated with approval/permission for use.....                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| As appropriate, procedure addresses use of MARK - UPs.....  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| If appropriate, procedure requires use of fire protection measures, ie, burning permits etc.....  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| If leads are lifted, jumpers placed or blocks used in the procedure, the PLANT IMPACT statement acknowledges such use.....                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| As appropriate, procedure notifies other affected departments such as Q.C., Operations, I&C, Maintenance, Rad Protection etc.....             | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| If Technical Specification is exceeded, appropriate action is identified.....   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| The procedure references valve numbers, motor control numbers, power supplies. Instrumentation identification is clear and correct.....       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| When encountered, E.Q. related equipment is identified as such.....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| Procedure steps are clear and accurate. They are not unnecessarily difficult to implement....   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| The procedure reflects the latest system or component configuration.....  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| The procedure reflects work as it is to be done at the station.....   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| Procedure removes any jumpers or blocks and restores lifted leads used to effect the work.....  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| "RETURN TO SERVICE" uses double verification and identifies specifics being verified.....   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| For maintenance procedures, "RETURN TO SERVICE" either performs a POST MAINTENANCE TEST or references a required test.....                    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| MARK - UPs are cleared or surrendered.....  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| "ACCEPTANCE CRITERIA" identifies accomplishment of specific goals.....  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

FORM PREPARED BY G. Thomas DATE 4-3-90



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NINE MILE POINT NUCLEAR STATION  
NINE MILE POINT UNIT 1  
OFF-SITE DOSE CALCULATION MANUAL (ODCM)

DATE AND INITIALS

APPROVALS

SIGNATURES

REVISION 8

REVISION 9

REVISION 10

General Superintendent  
Nuclear Generation  
K. A. Dahlberg  
J. L. Willis

**FOR INFORMATION ONLY**

Summary of Pages

Revision 8 (Effective 7/1/90 )

| <u>Page</u>  | <u>Date</u>   |
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| 1, 2, 5, 6, 8, 9, 11, 17, 41-44, 48,<br>49, 53, 54, 56-58, 90, 91, 94-96 | February 1987 |
| 3, 4, 7, 10, 20, 23, 27  | December 1987 |
| 50, 51   | January 1988  |
| 19, 21, 22, 24-26  | February 1990 |
| 1, 11, 111, 12-16, 18, 28-40, 45-47,<br>52, 55, 59-89, 92, 93, 97-129    | June 1990     |

NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE  
USED AFTER June 1992  
SUBJECT TO PERIODIC REVIEW.

