

ENCLOSURE 1

MFN 04-078

TRACG OPRM Model Description

Redacted and Non-Proprietary Information

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Enclosure 1
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File Transfer Instructions

The compact disk provided in Enclosure 3 contains both the TRACG and post-TRACG files. To execute TRACG, the following files must be transferred to the ALPHA workstation using the file transfer protocol:

1. TRACG_DSS-CD.SAV, TRACG saveset file
2. RESET_BACKUP.COM, Procedure that resets the record format and record length attributes of a BACKUP saveset
3. DSSCD_LOAD.COM, Batch command that restores files from saveset

After transferring these files to the workstation, run RESET_BACKUP to reset the record format and record length of the saveset file before running DSSCD_LOAD to restore the files from the saveset.

TRACG OPRM Model Description

1.0 Objective

The objective of this task is to develop a TRACG OPRM model for use in the PERRY base deck. This model will be used in the TRACG analysis to support the DSS-CD solution. However, the model is general and can be used in other analyses where the OPRM cell response is needed.

Perry is the representative BWR6 plant.

2.0 Analysis

Although Perry has four OPRM Channels only Channel 1 is modeled. The Perry Channel 1 LPRM assignments were used as the basis for the TRACG OPRM model. The steps to create the TRACG OPRM model for this particular OPRM channel are as follows:

[[

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Figure 1 shows the LPRM assignments to each OPRM cell. For example, Cell 1 is made up of LPRMs 1, 3, 18 and 20. Also shown in Figure 1 is the elevation of each LPRM; LRPM 1 is at level "A", LPRM 3 is at level "C" and LPRM 18 is at level "B" and LPRM 20 is at level "D".

The translation of the LPRM assignments onto a typical TRACG channel model is shown in Figure 2. Here the "crosses" represent the location of the LPRMs and the circles represent the each OPRM cell that draws input from the LPRMs.

In TRACG, the location of the each LPRM is specified by an i, j and k coordinate. The i, j coordinate of each LPRM can be seen in Figure 2.

[[

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The resulting TRACG OPRM model for Perry is contained in the file OPRM.INP.

Control Input/Output data cards, CNTRL100301 – CNTRL100342, are used to specify the LPRMs in Step 1.

Control Blocks 8001 – 8053 are used to combine the LPRM signals to form each OPRM cell signal in Step 2.

Control Blocks 8054 – 8085 are used to multiply the nominal OPRM cell signal by the core average power in Step 3.

Control Blocks 8086 and 8155 – 8218 are used to normalize each nominal OPRM cell signal in Step 4.

Control Blocks 8219 – 8250 are used to pass through the raw LPRM signal for plotting and data checking.

The resulting OPRM model adds 42 additional Control Input/Output data cards and 182 Control Block data cards to the existing basedeck.

Note that this model produces the raw OPRM cell output with no delay or filtering.

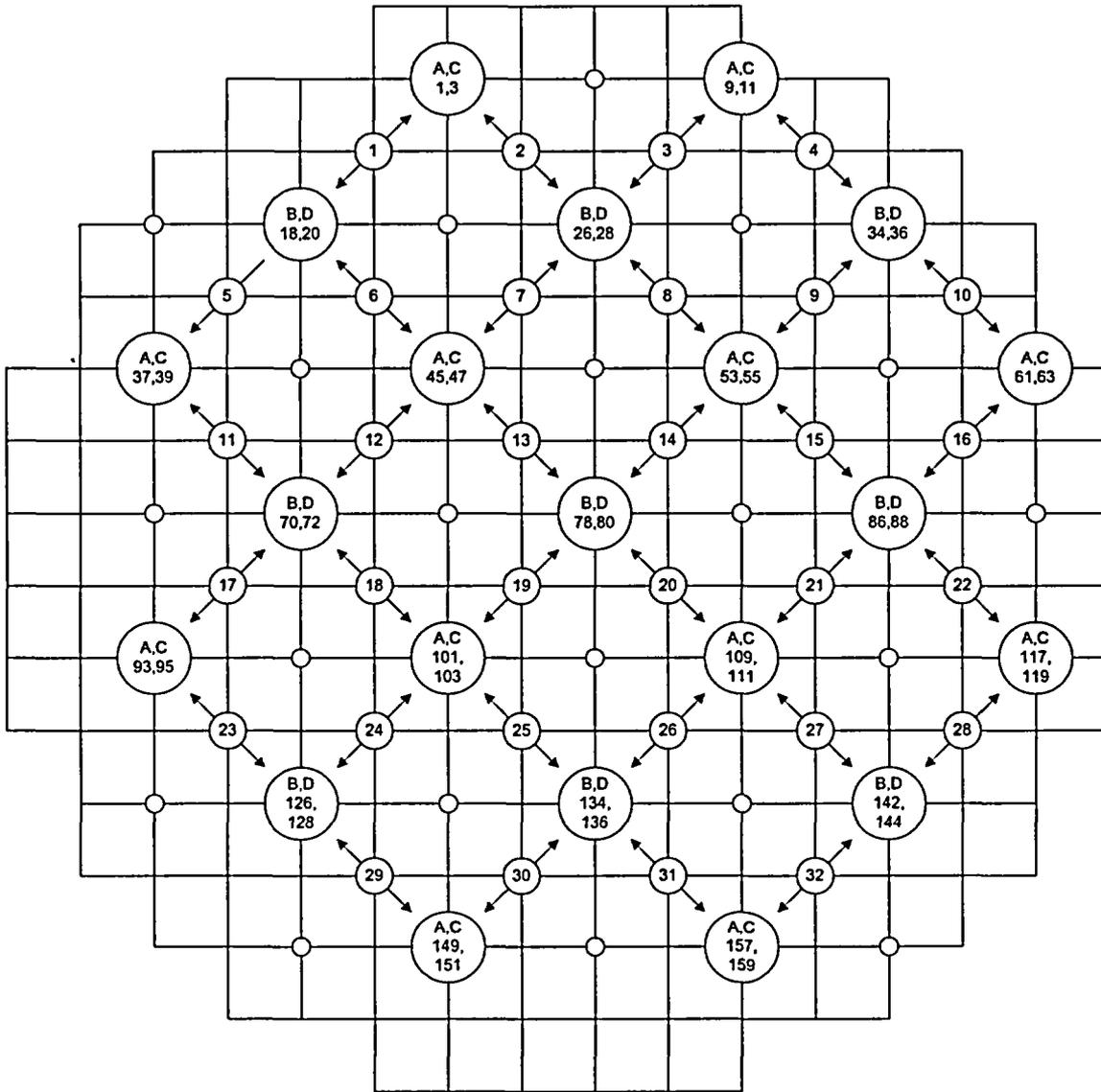


Figure 1. Perry LPRM assignments for Channel 1 (Reference 1)

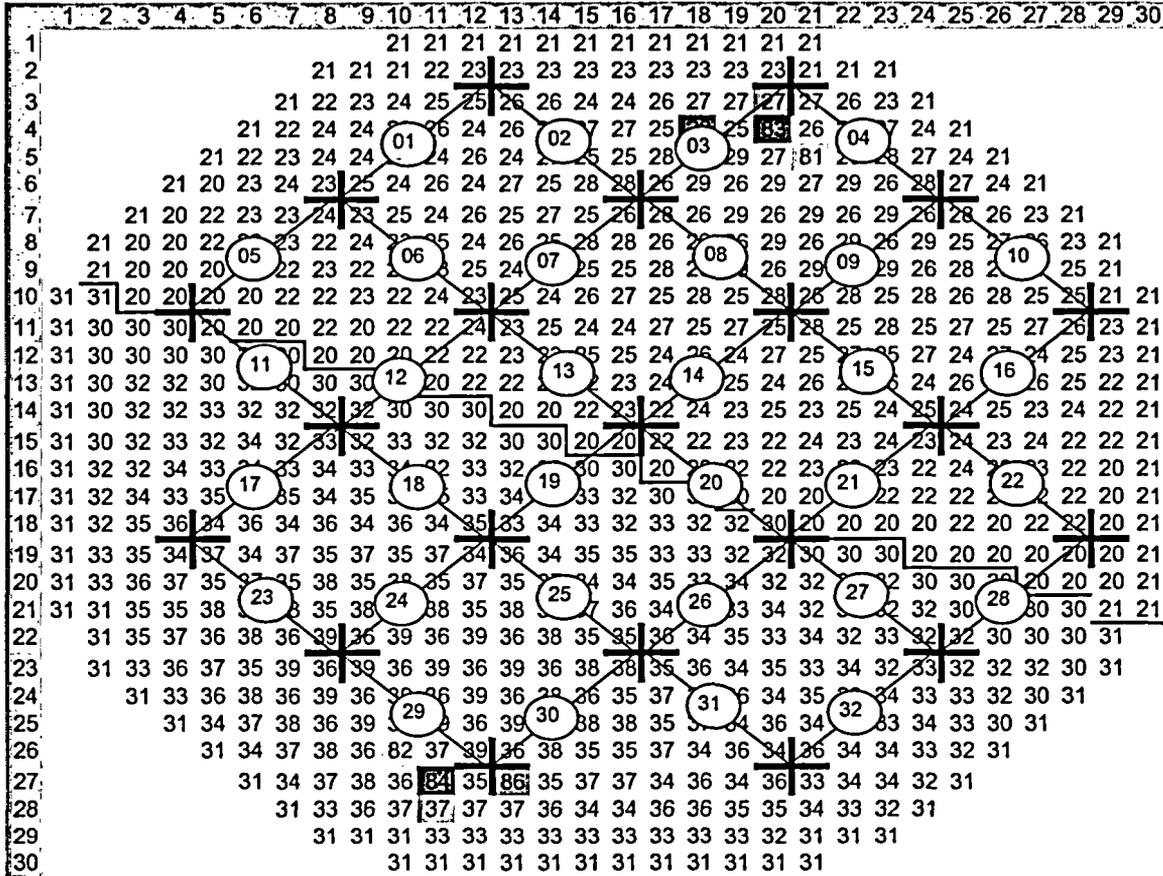


Figure 2. OPRM cell and LPRM location overlaid on typical Perry grouping.

ENCLOSURE 4

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AFFIDAVIT

General Electric Company

AFFIDAVIT

I, **David J. Robare**, state as follows:

- (1) I am Technical Projects Manager, Technical Services, General Electric Company ("GE") and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in Enclosure 2 to GE letter MFN 04-027, George Stramback to NRC, *DSS-CD Modeling (TAC No. MB5705)*, dated August 16, 2004. For text and text contained in tables, the GE proprietary information in Enclosure 2 is identified by a double underline inside double square brackets. Proprietary figures and large equation objects are identified with double square brackets before and after the object. In each case, the superscript notation⁽³⁾ refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.
- (3) In making this application for withholding of proprietary information of which it is the owner, GE relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).
- (4) Some examples of categories of information which fit into the definition of proprietary information are:
 - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;
 - b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
 - c. Information which reveals aspects of past, present, or future General Electric customer-funded development plans and programs, resulting in potential products to General Electric;

- d. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a., and (4)b, above.

- (5) To address 10 CFR 2.390 (b) (4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GE, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GE, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GE is limited on a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GE are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- (8) The information identified in paragraph (2), above, is classified as proprietary because it contains detailed results of analytical models, methods and processes, including computer codes, which GE has developed, and applied to perform stability evaluations using the detection and suppression capability of the confirmation density algorithm for the BWR.

The development of the detection and suppression capability of the confirmation density algorithm for the BWR was achieved at a significant cost, in excess of ¼ million dollars, to GE.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GE asset.

- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GE's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GE's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GE.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GE would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 16TH day of AUGUST 2004.



David J. Robare
General Electric Company

ENCLOSURE 2

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TRACG OPRM Model Description

GE Proprietary Information

PROPRIETARY INFORMATION NOTICE

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GE proprietary information is identified by a double underline inside double square brackets. In each case, the superscript notation^{3} refers to Paragraph (3) of the affidavit provided in Enclosure 4, which documents the basis for the proprietary determination. [[This sentence is an example.^{3}]] Specific information that is not so marked is not GE proprietary.

ENCLOSURE 3

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TRACG Base Deck

Compact Disk

PROPRIETARY INFORMATION NOTICE

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The entirety of the enclosed compact disk is proprietary. Therefore, the disk in this enclosure carries the notation "GE Proprietary Information. ⁽³⁾." The superscript notation ⁽³⁾ refers to Paragraph (3) of the affidavit provided in Enclosure 4, which documents the basis for the proprietary determination.