



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 21 1978

NOTE TO: S. Fabric, Chairman, Code Selection Committee
FROM: F. Odar, Analysis Branch, DSS
SUBJECT: CODE SELECTION

Enclosed is my evaluation of the three codes for the LOCA analysis only. The scores will be different if non-LOCA transients are considered since the requirements for the analysis of these transients are different from those for the LOCA.

For the LOCA analysis the summary of the scores is

<u>TRAC</u>	<u>RELAP5</u>	<u>THOR</u>
120	112	105

Hence, my recommendation will be that the TRAC code should be selected for the LOCA analysis.

The scoring was based on the list of items enclosed in your letter of September 3, 1978. Each item in the list was scored between 0 and 10. The details of the scoring for each item are presented in the enclosure.

For the analysis of system transients two separate improved codes (PWR and BWR) are needed by 1984-1985. Another BWR system transient code is needed to satisfy the requirements for audit calculations in the short term (1979 or 1980). I recommend that these transient codes should be developed.

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Enclosure

<u>Item</u>	<u>Scores</u>		
	<u>TRAC</u>	<u>RELAP5</u>	<u>THOR</u>
<u>Current Capabilities</u>			
1. Modeling of thermal & hydraulics	8	8	8
2. Geometric description; adaptability	8	8	8
3. Neutronics	5	5	5
4. Computation Efficiency	5	5	5
5. Verification	<u>8</u>	<u>5</u>	<u>1</u>
Total for current capabilities	31	28	24

	<u>TRAC</u>	<u>RELAP5</u>	<u>THOR</u>
<u>Adaptability</u>			
1. S.G. Tube Break	8	8	8
2. SLBA	8	8	8
3. Alternate ECCS (e.g. UHI)	8	8	8
4. PWR LOCA-EM	8	8	3
5. BWR LOCA-BE and EM	8	8	8
6. ATWS (PWR and BWR)	5	5	5
7. RIA	5	5	8
8. Operational Transients	<u>7</u>	<u>6</u>	<u>8</u>
Total	57	56	56

Assessment of Code

Development Team and Facility

	<u>TRAC</u>	<u>RELAP5</u>	<u>THOR</u>
1. Record of past performance	10	8	1
2. Knowledge of information obtained in reactor safety research	8	8	8
3. Personnel Port Access	6	6	8
4. Computer Access	<u>8</u>	<u>6</u>	<u>3</u>
Total:	32	28	25
Overall Scores:	120	112	105