

1. AMENDMENT/MODIFICATION NO. <b>8 (EIGHT)</b>	2. EFFECTIVE DATE <b>8/3/79</b>	3. REQUISITION/PURCHASE REQUEST NO. <b>RES-76-293-08</b>	4. PROJECT NO. (If applicable)
5. ISSUED BY <b>U.S. Nuclear Regulatory Commission Division of Contracts Washington, D. C. 20555</b>		6. ADMINISTERED BY (If other than block 5)	

7. CONTRACTOR NAME AND ADDRESS  <b>Battelle Columbus Laboratories 505 King Street Columbus, OH 43201</b>	8. AMENDMENT OF SOLICITATION NO. _____ DATED _____ (See block 9) <input checked="" type="checkbox"/> MODIFICATION OF CONTRACT/ORDER NO. <b>NRC-04-76-293-08</b> DATED <b>8/24/76</b> (See block 11)
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9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers  is extended,  is not extended. Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning \_\_\_\_\_ copies of this amendment, (b) By acknowledging receipt of this amendment on each copy of the offer submitted, or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

B&R NO. 60-19-40-01                      FIN NO. A4067                      -0-

1. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a)  This Change Order is issued pursuant to \_\_\_\_\_  
The Changes set forth in block 12 are made to the above numbered contract/order.

(b)  The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c)  This Supplemental Agreement is entered into pursuant to authority of **41 USC 252(c)(10)**  
It modifies the above numbered contract as set forth in block 12.

2. DESCRIPTION OF AMENDMENT/MODIFICATION

This contract is hereby modified to include the additional work specified in your Proposal No. 587-J-5163 dated July 31, 1979 where in BCL will use the MARCH Computer Code to perform certain Three Mile Island Accident related analyses. To incorporate this additional work the contract is modified as follows:

A. In appendix A of Paragraph 1., Statement of Work, the following specific work is added:

"The Contractor shall perform the Three Mile Island accident analysis using the MARCH Computer Code as proposed in BCL Proposal 587-J-5163 dated July 31, 1979, which proposal is incorporated by reference and made a part hereof. Specific work to be performed shall include:

Task I - Recreation and Analysis of the TMI Accident - Using the MARCH Code, together with the best available plant and accident data, BCL shall recreate the course of events occurring during the first 16 hours of the accident. Analyses of the resulting calculations will be used to assess the extent of

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As provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT     CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 4 COPIES TO ISSUING OFFICE

NAME OF CONTRACTOR/OFFEROR <b>Frank J. Lukz</b> (Signature of person authorized to sign)	BY 	17. UNITED STATES OF AMERICA	
NAME AND TITLE OF SIGNER (Type or print) <b>FRANK J. LUKZ CONTRACTING OFFICER</b>	16. DATE SIGNED <b>AUG 23 1979</b>	18. NAME OF CONTRACTING OFFICER (Type or print) <b>Kellogg V. Morton 7909240713</b>	19. DATE SIGNED <b>AUG 28 1979</b>

fuel damage incurred, determine the reasons for phenomenological behavior exhibited in the accident, and to understand the overall course of the accident.

Task II - Analysis of Alternative Accident Sequences - Using the MARCH Code and information produced in Section I above, a set of 9 variations in the accident progression will be analyzed. These alternative accident sequences involve generally variations in four important parameters: (1) duration of reactor coolant pump operation; (2) time of pressurizer relief valve closure; (3) time of emergency feedwater delivery to the steam generators; and (4) flow rates from the high pressure injection system. One additional sequence will also involve the loss of all AC electric power.

The nine (9) variations to be analyzed are as follows:

- (1) Base case (i.e. that developed in I) with the high pressure injection system run continuously in the ECC injection mode rather than being throttled back to smaller flow rates;
- (2) Base case with the high pressure injection system run continuously in the ECC injection mode (as in (1)) and a delay of about 1 hour in emergency feedwater (EFW) delivery to the OTSGs (rather than the actual 8-minute delay);
- (3) Base case with EFW delivery to the OTSGs at about 40 seconds (as designed) rather than at 8 minutes;
- (4) Base case with EFW delivery to the OTSGs at about 1 hour;
- (5) Base case with closure of the PORV block valve at approximately 25 minutes (when the operators first checked the PORV discharge line temperature), rather than at 2.3 hours;
- (6) Base case with closure of the PORV block valve at approximately 3.3 hours, a delay of an additional hour over the actual closure time of 2.3 hours;
- (7) Base case with only one RCP per loop tripped at 73 minutes, rather than both; and
- (8) Base case with all RCPs tripped concurrently with reactor trip;
- (9) Base case with the loss of all AC electric power at approximately 2 to 5 hours in the accident.

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- B. In Paragraph 2., Term, delete the date "September 30, 1979" and insert the date "October 31, 1979" in lieu thereof.
- C. In Paragraph 3., Estimate of Cost, Fixed Fee, Obligation of Funds, delete the amount "\$1,346,015.00" and "\$133,833.00" and substitute in lieu thereof the amounts "\$1,368,209.00" and "\$135,958.00".

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