

APR 9 1982

Mr. R. J. Hart, Manager
Oak Ridge Operations Office
U. S. Department of Energy
P. O. Box E
Oak Ridge, Tennessee 37830

Dear Mr. Hart:

FY 1982 NUCLEAR REGULATORY RESEARCH ORDER NO. 60-82-248 FOR OAK RIDGE
NATIONAL LABORATORY

Please authorize Oak Ridge National Laboratory to execute the program
described in the enclosed NRC Order.

If this meets with your approval, it is requested that acceptance be
indicated on the enclosed form and the original be returned to the NRC
Controller and a copy to this office.

Sincerely,

Original signed by *L.C. Shao (for)*

Guy A. Arlotto, Director
Division of Engineering Technology
Office of Nuclear Regulatory Research

Enclosure:

NRC Order

cc

cc w/enclosure:

R. W. Barber, DOE/NSC

D. Raus, ORNL

DIST

Subj:

Circ

Chron

Riggs rf

A. Puglise, CON

J. Mate, CON

G. Arndt, DET

A. Eiss, DET

RES:D

Wylbur

Fin File

FOIA-85-143

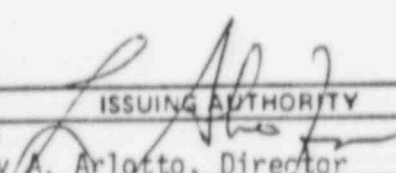
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REYTBLAB5-143 PDR

RECORD NOTE: 1102 sent 3/25/82

ARCS:D
Gillespie

OFFICE	RMB	RMB	DET	DET	DET	DET	DET:D
SURNAME	Riggs/mk	Forehand/Hayes	Arndt	Anderson	Eiss	Shao	Arlotto
DATE	3/25/82	4/3/82	3/29/82	3/13/82	3/12/82	4/1/82	4/6/82

NRC FORM 173 (2-78)		U.S. NUCLEAR REGULATORY COMMISSION		ORDER NUMBER 60-82-248
STANDARD ORDER FOR DOE WORK				DATE APR 9 1982
ISSUED TO (DOE Office) Oak Ridge Operations Office		ISSUED BY (NRC Office) Division of Engineering Technology, RES		ACCOUNTING CITATION APPROPRIATION SYMBOL 31X0200.602
PERFORMING ORGANIZATION AND LOCATION Oak Ridge National Laboratory				B&R NUMBER 601921
FIN TITLE Containment Leak Rate Testing				FIN NUMBER B0489-2
OBLIGATION AVAILABILITY PROVIDED BY:				WORK PERIOD - THIS ORDER FIXED <input type="checkbox"/> ESTIMATED <input checked="" type="checkbox"/> FROM 10/1/81 TO 9/30/82
A. THIS ORDER				\$ 150,000
B. TOTAL OF ORDERS PLACED PRIOR TO THIS DATE WITH THE PERFORMING ORGANIZATION UNDER THE SAME "APPROPRIATION SYMBOL" AND THE FIRST FOUR DIGITS OF THE "B&R NUMBER" CITED ABOVE				\$ 41,281,000
C. TOTAL ORDERS TO DATE (TOTAL A & B)				\$ 41,431,000
D. AMOUNT INCLUDED IN "C" APPLICABLE TO THE "FIN NUMBER" CITED IN THIS ORDER.				\$ 150,000
FINANCIAL FLEXIBILITY: <input type="checkbox"/> FUNDS WILL NOT BE REPROGRAMMED BETWEEN FINS. LINE D CONSTITUTES A LIMITATION ON OBLIGATIONS AUTHORIZED. <input checked="" type="checkbox"/> FUNDS MAY BE REPROGRAMMED NOT TO EXCEED $\pm 10\%$ OF FIN LEVEL UP TO \$50K. LINE C CONSTITUTES A LIMITATION ON OBLIGATIONS AUTHORIZED.				
STANDARD TERMS AND CONDITIONS PROVIDED DOE ARE CONSIDERED PART OF THIS ORDER UNLESS OTHERWISE NOTED.				
ATTACHMENTS: THE FOLLOWING ATTACHMENTS ARE HEREBY MADE A PART OF THIS ORDER: <input checked="" type="checkbox"/> STATEMENT OF WORK <input type="checkbox"/> ADDITIONAL TERMS AND CONDITIONS <input type="checkbox"/> OTHER			SECURITY: <input checked="" type="checkbox"/> WORK ON THIS ORDER IS NOT CLASSIFIED. <input type="checkbox"/> WORK ON THIS ORDER INVOLVES CLASSIFIED INFORMATION. NRC FORM 187 IS ATTACHED.	
REMARKS:				
ISSUING AUTHORITY SIGNATURE  TITLE Division of Engineering Technology Office of Nuclear Regulatory Research			ACCEPTING ORGANIZATION SIGNATURE TITLE DATE	

1982 PROGRAM BRIEF

PROGRAM: DET

TITLE: Containment Leak Rate Testing

CONT: FIN NO.: B0489
CONTRACTOR: ORNL
SITE: Oak Ridge

NRC TECHNICAL MONITOR: E. G. Arndt

PRINCIPAL INVESTIGATOR: D. ^Naus

OBJECTIVE:

Evaluate the practicality of the containment leak testing program, and compatibility of regulatory requirements and industry testing standards.

BUDGET ACTIVITY:

FY 1982 SCOPE:
(10/01/81-09/30/82)

OBLIG: \$150,000

- A. Review existing containment leak rate testing regulatory requirements, and the programs conducted in compliance with these requirements, using field and licensing experience.
- B. Review the proposed Appendix J revision. Provide recommendations and bases for specific proposed Appendix J revisions, and comment on the remainder of the proposed revision as appropriate.
- C. Review ANSI/ANS 56.8-1981, "Containment System Leakage Testing Requirements", for compatibility with the proposed Appendix J revision.
- D. Provide a value-impact analysis for the entire proposed Appendix J revision, as prepared for public comment issue, addressing the value and impact on the licensees, the licensing process, and the public. Revise the value-impact analysis as necessary following the public comment period, reflecting any changes made for the final rule.

REPORTS:

Monthly progress reports
One draft report
One final report

6/27/82
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Fin # B0489

WORK STATEMENT ADDENDUM

Appendix J Requirements/ Site Source Terms

Draft NUREG - 0773, " Reactor Accident Source Terms: Design and Siting Perspectives", dated March 1982, presents current information on reactor accidents that have been analyzed for various reactor designs, and develops a set of radioactive releases (source terms) in categories 1 through 5 which represent the spectrum of accidents.

Using release fractions to the containment which correspond to these source terms, except for those corresponding to an assumed containment failure (i.e., SST-1), in categories 1 through 5:

- A. Perform a sensitivity analysis in which the containment design leak rate is assumed to be 0.1%, 0.5%, 1.0%, and 5.0% (wt.%/day).
- B. Determine the off-site risk, in terms of dose, to the public from each of these potential containment source terms, and
- C. Evaluate the desirability and practicality of establishing, explicitly in Appendix J, a single leakage limiting criterion for containment systems that would apply equally well to:
 - a) Large, dry PWR containments,
 - b) Type I, II, and III BWR containments,
 - c) Ice condenser containments, and
 - d) Negative pressure containments.

This analysis will provide a basis for judging whether the present Appendix J containment integrated leak rate test criteria are realistic in terms of their effect on public risk and operational costs, and should include the following:

- 1) Whether there is a correlation between leakage test values/test intervals and estimated actual leakage during intervals between tests (based on LERs, as-found tests, etc.).
- 2) Review the current $0.25L_d$ safety margin to see whether it provides reasonable assurance that actual leakage does not exceed design value.

News, ORNL

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

May 5, 1982

Dan,

Here is a copy of the missing material
that should have been in the package
delivered to you.

Smiley

FOIA-85-143

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MEMO ROUTE SLIP Form ERDA-93 (1-75) ERDAM 0240		See me about this. Note and return.	For concurrence. For signature.	<input checked="" type="checkbox"/> For action. For information.
TO (Name and unit) W. Pasedag, AEB J. Glynn, RRBR	INITIALS DATE	REMARKS ORNL Contract Addendum - Leak Testing After iterations between RRBR:RES & AEB:NRR. I plan to discuss with ORNL on May 7, 1982 the costs schedule and content of the addendum as attached. Please let me know as early as possible if this addendum should not be negotiated in its current form. Contributions to pay for this addendum are also solicited from your organizations to make sure that this work will get funded and done.		
TO (Name and unit) cc: J. Burns, MSEB G. Burdick, RRBR	INITIALS DATE			
FROM (Name and unit) G. Arndt, MSEB	REMARKS			
PHONE NO. 35860	DATE 4/27/82			

Fin # B0489

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