

REQUEST FOR OMB REVIEW

(Under the Paperwork Reduction Act and Executive Order 12291)

Important — Read instructions (SF-83A) before completing this form. Submit the required number of copies of SF-83, together with the material for which review is requested to:

Office of Information and Regulatory Affairs
Office of Management and Budget
Washington, D.C. 20503

1. Department/Agency and Bureau/Office originating request <p align="center">U.S. Nuclear Regulatory Commission</p>	3. Name(s) and telephone number(s) of person(s) who can best answer questions regarding request V. Thomas 30.-492-4755
2. 6-digit Agency/Bureau number (first part of 11-digit Treasury Account No.) <p align="center">3 1 5 0 — —</p>	4. 3-digit functional code (last part of 11-digit Treasury Account No.) <p align="center">2 7 6</p>
5. Title of Information Collection or Rulemaking IE Bulletin 82- "Deficiencies in Primary Containment Electrical Penetration Assemblies"	C. Is this a rulemaking submission under Section 3504(h) of P.L. 96-511? (Check one) 1 <input checked="" type="checkbox"/> No (Section 3507 submission) 2 <input type="checkbox"/> Yes, NPRM. Expected date of publication: _____ 3 <input type="checkbox"/> Yes, final rule. Expected date of publication: _____ Effective date: _____
6. A. Is any information collection (reporting or recordkeeping) involved? (Check one) 1 <input checked="" type="checkbox"/> Yes and proposal is attached for review 2 <input type="checkbox"/> Yes but proposal is not attached — skip to question D. 3 <input type="checkbox"/> No — skip to question D.	D. At what phase of rulemaking is this submission made? (Check one) 1 <input checked="" type="checkbox"/> Not applicable 2 <input type="checkbox"/> Major rule, at NPRM stage 3 <input type="checkbox"/> Major Final rule for which no NPRM was published 4 <input type="checkbox"/> Major Final rule, after publication of NPRM 5 <input type="checkbox"/> Nonmajor rule, at NPRM stage 6 <input type="checkbox"/> Nonmajor rule, at Final stage
B. Are the respondents primarily educational agencies or institutions or is the purpose related to Federal education programs? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

COMPLETE SHADED PORTION IF INFORMATION COLLECTION PROPOSAL IS ATTACHED

7. Current (or former) OMB Number None Expiration Date N/A	8. Requested Expiration Date Nov. 1, 1985	12. Agency report form number(s) N/A
9. Is proposed information collection listed in the information collection budget? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13. Are respondents only Federal agencies? <input type="checkbox"/> Yes <input type="checkbox"/> No	14. Type of request (Check one) 1 <input type="checkbox"/> preliminary plan 2 <input type="checkbox"/> new (not previously approved or expired more than 6 months ago) 3 <input type="checkbox"/> revision 4 <input type="checkbox"/> extension (adjustment to burden only) 5 <input type="checkbox"/> extension (no change) 6 <input type="checkbox"/> reinstatement (expired within 6 months)
10. Will this proposed information collection cause the agency to exceed its information collection budget allowance? (If yes, attach amendment request from agency head.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	11. Number of report forms submitted for approval None	

15. <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>a. Approximate size of universe (if sample)</td><td align="center">N/A</td></tr> <tr><td>b. Size of sample</td><td align="center">N/A</td></tr> <tr><td>c. Estimated number of respondents or record keepers per year</td><td align="center">110</td></tr> <tr><td>d. Reports annually by each respondent (item 25)</td><td align="center">1</td></tr> <tr><td>e. Total annual responses (item 15c x 15d)</td><td align="center">110</td></tr> <tr><td>f. Estimated average number of hours per response</td><td align="center">80</td></tr> <tr><td>g. Estimated total hours of annual burden in Fiscal Year (item 15e x 15f)</td><td align="center">8,800</td></tr> </table>	a. Approximate size of universe (if sample)	N/A	b. Size of sample	N/A	c. Estimated number of respondents or record keepers per year	110	d. Reports annually by each respondent (item 25)	1	e. Total annual responses (item 15c x 15d)	110	f. Estimated average number of hours per response	80	g. Estimated total hours of annual burden in Fiscal Year (item 15e x 15f)	8,800	16. Classification of Change in Burden (explain in supporting statement) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center">NA</td> <td align="center">No. of Responses</td> <td align="center">No. of Reporting Hours</td> <td align="center">Cost to the Public</td> </tr> <tr> <td>a. In inventory</td> <td></td> <td></td> <td align="right">\$</td> </tr> <tr> <td>b. As proposed</td> <td></td> <td></td> <td align="right">\$</td> </tr> <tr> <td>c. Difference (b-a)</td> <td></td> <td></td> <td align="right">\$</td> </tr> <tr> <td align="center" colspan="4">Explanation of difference (indicate as many as apply)</td> </tr> <tr> <td align="center" colspan="4">Adjustments</td> </tr> <tr> <td>d. Correction-error</td> <td align="center">+</td> <td align="center">+</td> <td align="right">+ \$</td> </tr> <tr> <td>e. Correction-reestimate</td> <td align="center">+</td> <td align="center">+</td> <td align="right">+ \$</td> </tr> <tr> <td>f. Change in use</td> <td align="center">+</td> <td align="center">+</td> <td align="right">+ \$</td> </tr> <tr> <td align="center" colspan="4">Program changes</td> </tr> <tr> <td>g. Increase</td> <td align="center">+</td> <td align="center">+</td> <td align="right">+ \$</td> </tr> <tr> <td>h. Decrease</td> <td align="center">-</td> <td align="center">-</td> <td align="right">- \$</td> </tr> </table>	NA	No. of Responses	No. of Reporting Hours	Cost to the Public	a. In inventory			\$	b. As proposed			\$	c. Difference (b-a)			\$	Explanation of difference (indicate as many as apply)				Adjustments				d. Correction-error	+	+	+ \$	e. Correction-reestimate	+	+	+ \$	f. Change in use	+	+	+ \$	Program changes				g. Increase	+	+	+ \$	h. Decrease	-	-	- \$
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7. Abstract—Needs and Uses (50 words or less) Requires NRC licensees and holders of construction permits to submit written reports regarding the adequacy of electrical penetration assemblies supplied by the Bunker Ramo Corporation. The information in such reports will provide reasonable assurance that these electrical penetration assemblies are suitable for service intended.

8. Related report form(s) (give OMB number(s), IRCN(s), internal agency report form number(s) or symbol(s)) N/A	20. Catalog of Federal Domestic Assistance Program Number N/A
21. Small business or organization <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

19. Type of affected public (Check as many as apply) 1 <input type="checkbox"/> individuals or households 2 <input type="checkbox"/> state or local governments 3 <input type="checkbox"/> farms 4 <input checked="" type="checkbox"/> businesses or other institutions (except farms)	22. Type of activity of affected public—indicate 3-digit Standard Industrial Classification (SIC) code(s) (up to 10) — if over 10, check <input type="checkbox"/> Multiple or <input type="checkbox"/> All 4 9 1
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23. Brief description of affected public (e.g., "retail grocery stores," "State education agencies," "households in 50 largest SMSAs")

Electrical Utilities

24. Purpose (Check as many as apply. If more than one, indicate predominant by an asterisk) 1 <input type="checkbox"/> application for benefits 2 <input type="checkbox"/> program evaluation 3 <input type="checkbox"/> general purpose statistics 4 <input checked="" type="checkbox"/> regulatory or compliance 5 <input type="checkbox"/> program planning or management 6 <input type="checkbox"/> research	26. Collection method (Check as many as apply) 1 <input checked="" type="checkbox"/> mail self-administered 2 <input type="checkbox"/> other self-administered 3 <input type="checkbox"/> telephone interview 4 <input type="checkbox"/> personal interview 5 <input type="checkbox"/> recordkeeping requirement: _____ years Required retention period: _____ years 6 <input type="checkbox"/> other—describe:
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25. Frequency of Use 1 <input checked="" type="checkbox"/> Nonrecurring Recurring (check as many as apply) 2 <input type="checkbox"/> on occasion 6 <input type="checkbox"/> semiannually 3 <input type="checkbox"/> weekly 7 <input type="checkbox"/> annually 4 <input type="checkbox"/> monthly 8 <input type="checkbox"/> biennially 5 <input type="checkbox"/> quarterly 9 <input type="checkbox"/> other—describe:	27. Collection agent (Check one) 1 <input checked="" type="checkbox"/> requesting Department/Agency 2 <input type="checkbox"/> other Federal Department/Agency 3 <input type="checkbox"/> private contractor 4 <input type="checkbox"/> recordkeeping requirement 5 <input type="checkbox"/> other—describe:
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28. Authority for agency for information collection or rulemaking—indicate statute, regulation, judicial decree, etc. Atomic Energy Act	30. Do you promise confidentiality? (If yes, explain basis for pledge in supporting statement.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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29. Respondent's obligation to reply (Check as many as apply) 1 <input type="checkbox"/> voluntary 2 <input type="checkbox"/> required to obtain or retain benefit 3 <input checked="" type="checkbox"/> mandatory—cite statute, not CFR (attach copy of statutory authority) Sec. 182a of Atomic Energy Act of 1954 as amended	31. Will the proposed information collection create a new or become part of an existing Privacy Act system of records? (If yes, attach Federal Register notice or proposed draft of notice.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
32. Cost to Federal Government of information collection or rulemaking \$ 449,600.00	

COMPLETE ITEMS 33 THRU 35 ONLY IF RULEMAKING SUBMISSION

33. Compliance costs to the public \$ _____	34. Is there a regulatory impact analysis attached? <input type="checkbox"/> Yes <input type="checkbox"/> No	35. Is there a statutory or judicial deadline affecting issuance? <input type="checkbox"/> Yes. Enter date: _____ <input type="checkbox"/> No
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CERTIFICATION BY AUTHORIZED OFFICIALS SUBMITTING REQUEST—We certify that the information collection or rulemaking submitted for review is necessary for the proper performance of the agency's functions, that the proposal represents the minimum public burden and Federal cost consistent with need, and is consistent with applicable OMB and agency policy directives. Signature and title of:

APPROVING POLICY OFFICIAL FOR AGENCY Patricia G. Norry	DATE 11-12-82	SUBMITTING OFFICIAL R. Stephen Scott	DATE 11/15/82
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Supporting Statement for IE Bulletin
on Deficiencies in Primary Containment
Electrical Penetration Assemblies

1. Justification

- (i) Several nuclear power plants were found to have deficiencies in containment electrical penetrations supplied by the Bunker Ramo Corporation. The circumstances are described in the enclosed proposed IE bulletin. The deficiencies in the electrical penetrations represent a potentially significant safety problem. Therefore, inspection of electrical penetrations provided by Bunker Ramo is being required of all licensees of nuclear plants and holders of construction permits having these penetrations installed at their plants. The results of the inspections and corrective measures taken, if any, are to be reported to the NRC.
- (ii) See above.
- (iii) There is no other source for the data.
- (iv) Not applicable.

2. Description of Survey Plan

- (i) All nuclear power reactor facilities holding an operating license or construction permit are required to respond.
- (ii) The respondents are the owners of nuclear power facilities holding an operating license or construction permit.
- (iii) Not applicable.
- (iv) Not applicable.

3. Tabulation and Publication Plans

There are no current plans for publication of the data obtained.

4. Time Schedule for Data Collection and Publication

- (i) The recipient response time schedule is specified in the bulletin. Respondents not having Bunker Ramo electrical penetration must respond within 30 days of receipt of the bulletin stating this fact. Construction permit holders must submit a written report of their findings and related corrective actions taken within 90 days of receipt of this bulletin. Owners of operating reactors must submit a written report describing plans and schedule for completing their plans within 45 days of receipt of the bulletin.
- (ii) There are no plans to publish the results.

5. Consultation Outside the Agency

- (i) The proposed bulletin was discussed with members of Atomic Industrial Forum, the Institute of Nuclear Power Operations and also with several affected licensees of nuclear power plants.
- (ii) No data is currently available regarding this matter.
- (iii) Not applicable.

6. Estimate of Respondent Reporting Burden

The total reporting effort is estimated to be 80 person-hours per individual nuclear unit or a total of 8,800 person-hours for 110 units. This is based on previous experience on similar reporting requirements.

7. Sensitive Questions

Not applicable.

8. Estimate of Cost to Federal Government

Preparation of the bulletin, including obtaining all necessary clearances required about 240 person-hours of effort. It is estimated that about 100 person-hours of review effort will be required for each nuclear unit for a total of 11,000 person-hours of review effort. Therefore, the total government effort is estimated to be 11,240 person-hours. Based on 11,240 hours at \$40/hour for a total of \$449,600.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

October , 1982

IE BULLETIN NO. 82- : DEFICIENCIES IN PRIMARY CONTAINMENT ELECTRICAL
PENETRATION ASSEMBLIES

Addressees:

All nuclear power reactor facilities holding an operating license or construction permit.

Purpose:

The purpose of this bulletin is to inform CP holders and licensees about findings from a joint Region III, Region IV, and IE study concerning electrical penetrations supplied by the Bunker Ramo Company. It was concluded that there is a potential safety significance and generic implications at a limited number of plants. Therefore, we ask all recipients of this bulletin to review the information herein for applicability to their facilities and (1) to take appropriate action if their plant utilizes hard epoxy containment electrical penetration assemblies manufactured by the Bunker Ramo Company or (2) submit a report stating that such assemblies are not used in their facility.

Description of Circumstances:

Several deficiencies in containment electrical penetrations supplied by Bunker Ramo, have been identified. A summary of these deficiencies is provided below:

1. On January 15, 1979, Consumer Power Company submitted 10 CFR 50.55(e) report No. 78-12 for the Midland nuclear facility identifying deficiencies associated with #10 AWG and smaller wire terminations located in the inboard terminal boxes of Bunker Ramo penetration assemblies. The deficiencies identified included improper lug crimps, incorrect lug types, and loose connections on terminal blocks. These deficiencies were attributed, in part, to an inexperienced employee at Bunker Ramo.
2. On March 26, 1980, Union Electric Company submitted 10 CFR 50.55(e) report No. 80-03 for the Callaway nuclear facility identifying deficiencies associated with electrical penetration assemblies supplied by Bunker Ramo. The deficiencies included improperly crimped lugs and improperly identified penetration cables. During hand-pull tests, at least 38 wires separated from their lugs. It was reported that this deficiency resulted when Bunker Ramo overcrimped and undercrimped lugs.
3. On June 12, 1980, the NRC was informed by Standardized Nuclear Unit Power Plant Systems (SNUPPS) that additional inspections at the Wolf Creek nuclear facility identified further concerns regarding the quality and integrity of Bunker Ramo electrical penetration terminations. Deficiencies identified at the Wolf Creek facility included improperly crimped lugs and incorrectly sized lugs.

4. On October 2, 1980, Commonwealth Edison submitted 10 CFR 50.55(e) report No. 80-02 for the LaSalle County Station Unit 2 facility identifying cracked or missing insulation (exposing bare copper) on small-diameter conductors as they enter/exit the epoxy module portion of the Bunker Ramo electrical penetrations. The report stated, in part, "The cracking was determined to have resulted from stress points in the insulation created by a mechanical bond between the potting compound (used to form the over-mold portion of the module) and the insulation. Movement of the conductors entering or exiting the modules produced cracks along the stress points."
5. On March 31, 1982, the NRC was advised through a 10 CFR 21 report that deficiencies have been identified in Bunker Ramo electrical penetrations installed at the Midland nuclear facility. The deficiencies involve #2, #6, #8, #10, #14, and #16 AWG splices and cracks in the insulation of some conductors as they emerge from certain types of modules. The deficiencies were reported to have occurred when site personnel moved cables to inspect for rodent damage.
6. On April 8, 1982, Consumers Power Company submitted 10 CFR 50.55(e) report No. 82-02 for the Midland nuclear facility identifying deficiencies in Bunker Ramo electrical penetrations. The identified deficiencies included cracks in conductor insulation at the conductor-module interface (resulting in some exposure of the module copper conductors) and inadequately crimped butt splices (resulting in several #2 AWG butt splices being pulled apart). These deficiencies were observed in installed electrical penetrations. In addition, similar deficiencies were observed in crated electrical penetrations and spare module assemblies stored in warehouse facilities. The cracked insulation was reported to have been probably caused by a chemical/mechanical reaction between the module materials, mechanical stresses resulting from the module design, and a lack of explicit handling/packing instructions reflecting the frailty of the electrical penetrations/modules. The inadequately crimped butt splices were reportedly caused by a breakdown in the fabrication/design of the module assemblies.

The above deficiencies have all been identified on Bunker Ramo electrical penetrations utilizing a hard epoxy module design. In addition to the above construction sites, Bunker Ramo has identified the Comanche Peak, Byron and Braidwood sites as using this design. These deficiencies could result in failures of Class 1E equipment essential to the safe operation and or/shutdown of nuclear facilities. The potential failures which could occur include electrical short-circuits, localized circuit overheating, adjacent circuit cross-talk, and circuit discontinuities.

In addition to the above documented deficiencies associated with nuclear facilities under construction, a deficiency in Bunker Ramo electrical penetrations utilizing a soft epoxy module design has recently been identified at Davis-Besse, an operating nuclear facility. Davis-Besse has

experienced numerous spurious asymmetric rod alarms. The licensee has determined that the spurious alarms are caused by intermittent voltage drops within the electrical penetration module assemblies. To determine the cause of the voltage drops, two module assemblies have been removed during the current refueling outage and will be shipped to a laboratory for testing. Calvert Cliffs, Trojan, and Arkansas, plants also use the soft epoxy module design. A supplement to this bulletin will be issued, if deemed necessary, when the Davis-Besse laboratory results are available.

Actions To Be Taken by Holders of Operating Licenses or Construction Permits

1. If Bunker Ramo electrical penetrations having module assemblies which utilize the hard epoxy module design are considered to be spare units or units or not yet installed at your facility, the following course of action should be taken:
 - a. Inspect all supplier provided electrical penetration terminal boxes and verify satisfactory termination of these conductors.
 - b. Inspect all electrical penetration conductors as they enter and exit penetration modules and verify the integrity of the insulation around the conductors of the assembly.
 - c. Conduct detailed examinations and obtain values of essential parameters that have been established by the manufacturer of the connector on all supplier provided in-line butt splices having a wire size of #2 AWG and smaller, and ascertain acceptability of these connections.
 - d. If any supplier-provided conductor terminations, module insulation, or in-line butt splice are determined to be unacceptable based on the inspections and examinations discussed in Items a, b, and c above, then immediately initiate the replacement or repair. If the repairs involve recrimping of connection(s), then this action must be supported by documentation containing the results of the qualification tests which are considered acceptable. This is to include pull tests on similarly installed sample connections from your facility. An acceptable alternative would be type tests of recrimped connections of each wire size performed by the connector manufacturer. These sample connections must be of similar parameters (i.e. wire size, connector type, qualified crimping and crimping procedures, etc.) as those of the connectors in question.
2. Plants under Construction
 - a. If Bunker Ramo electrical penetration assemblies utilizing the hard epoxy module design are installed in safety-related systems at your facility, you shall perform a full inspection and/or examination of the accessible portions of the installed assemblies as discussed in Items 1a and 1b above.