ORGANIZATION: THE ROCKBESTOS COMPANY
NEW HAVEN, CONNECTICUT

REPORT NO.: 99900277/85-02	INSPECTION DATE(S): 4/22-24,5/22-24, 9/16-17/85	INSPECTION ON-SITE HOURS: 104

CORRESPONDENCE ADDRESS: The Rockbestos Company
A Member of the Marmon Group
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PRINCIPAL PRODUCT: Insulated Wire and Cable.

NUCLEAR INDUSTRY ACTIVITY: Currently the testing laboratory at the New Haven plant conducts all thermal aging, loss-of-coolant accident (LOCA) simulations, post-LOCA sample evaluation testing, and flame testing for Class 1E (safety-related) electrical equipment qualification (EQ) on Rockbestos cable. Nuclear related product manufacturing at the New Haven plant comprises approximately 5 percent of the plants total output.

ASSIGNED INSPECTOR: S. D. Alexander 10/3/85
S. D. Alexander, Equip. Qual. Inspec. Section (EQIS) Date

OTHER INSPECTOR(S): M. Jacobus, Sandia National Laboratories (SNL)

APPROVED BY: U. Potapovs 10-3-85
U. Potapovs, Chief, EQIS, Vendor Program Branch Date

INSPECTION BASES AND SCOPE:

A. BASES: 10 CFR Part 50, Appendix B.

B. SCOPE: This inspection consisted of three parts in which the status of the requalification program (RP) on currently manufactured Class 1E cable types was reviewed. Emphasis in the first part was on observing post-LOCA sample evaluation testing of chemically cross-linked polyethylene (CXLPE) insulated Firewall III, in the second part, on observing LOCA simulation for radiation cross-linked polyethylene (RXLPE), and in the third part on observing post-LOCA sample evaluation testing of the RXLPE.

PLANT SITE APPLICABILITY: San Onofre 1 (50-206); Haddam Neck (50-213); Nine Mile Point 1 (50-220); Dresden 2 (50-237); Millstone 1 (50-245); Dresden 3 (50-249); Turkey Point 3 and 4 (50-250/251); Palisades (50-255)
(continued on next page)

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PLANT SITE APPLICABILITY: (continued)
Monticello (50-263); Quad Cities 2 (50-265); Point Beach 1 (50-266); Peach Bottom 2 and 3 (50-277/278); Prairie Island 1 (50-282); Indian Point 3 (50-286); Pilgrim 1 (50-293); Zion 1 (50-295); Point Beach 2 (50-301); Zion 2 (50-304); Kewaunee (50-305); Prairie Island 2 (50-306); Maine Yankee (50-309); Arkansas 1 (50-313); Calvert Cliffs 1 and 2 (50-317/318); Fitzpatrick (50-333); St. Lucie 1 (50-335); Millstone 2 (50-336); San Onofre 2 and 3 (50-361/362); Arkansas 2 (50-368); McGuire 1 (50-369); LaSalle 1 and 2 (50-373/374); Med. Coll. Hanover (50-377); St. Lucie 2 (50-389); LaCrosse (50-409); Nine Mile Point 2 (50-410); Catawba 1 and 2 (50-413/414); and WPPSS-3 (50-508).

A. VIOLATIONS:

None.

B. NONCONFORMANCES:

None.

C. UNRESOLVED ITEMS:

None.

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

1. (Closed) Nonconformance (85-01, Item B.1):

Rockbestos had conducted chemical spray pH monitoring using an alternate technique and instrument without documented procedures and the procedures for preparation of chemical spray solution did not include criteria for determining if the solution had been correctly prepared. The NRC inspector verified that procedures covering the alternate pH monitoring technique and instrument were being prepared and procedures for preparing spray solution had been revised to include appropriate acceptance criteria. The NRC inspector also observed preparation of the spray solution and verified compliance with the procedure.

2. (Closed) Nonconformance (85-01, Item B.2):

Rockbestos had failed to follow their LOCA chamber operating procedures by not shutting the vent valve when required. During this inspection, Rockbestos stated that the operators had been retrained

on the procedure and that the need to ensure that operators are familiar with and are using written procedures had been reemphasized with operators and supervisors. The NRC inspector noted improved use of procedures during this inspection.

3. (Closed) Nonconformance (85-01, Item B.3):

Rockbestos had failed to stir pH sample and buffer solutions using a magnetic stirrer and had failed to rinse the pH meter probe following each immersion in buffer or sample solution as required by their procedures. The NRC inspector noted that Rockbestos used a magnetic stirrer during the LOCA simulation on RXLPE insulated Firewall III. Rockbestos stated that operators had been retrained on the pH laboratory practices prescribed by the procedures. The NRC inspector observed improved laboratory technique including the prescribed probe rinsing.

4. (Closed) Nonconformance (85-01, Item B.4):

Rockbestos had failed to include, in a purchase order (PO) for EQ test equipment calibration, any of the information required by the procedure governing PO's for outside calibration. During this inspection, the NRC inspector reviewed the subsequent PO issued to a new calibration facility for calibration of EQ test equipment and verified that applicable requirements were met.

5. (Closed) Nonconformance (85-01, Item B.5):

Contrary to procedures for making changes to document entries, a technician at Rockbestos had written over an entry on a calibration data sheet and failed to initial or date it. The NRC inspector reviewed a properly corrected data sheet which replaced the original. The NRC inspector also reviewed an interim change to the procedure which clarified the prescribed method for correcting entries to documents and determined that the person involved had been retrained on this procedure.

6. (Open) Nonconformances (84-02, Items B.1 and B.2, 83-03, Items B.1 - B.5):

The NRC inspector took no action on these production nonconformances during this inspection.

7. (Open) Nonconformances (83-04, Item B.1 and B.2, 83-02, Item B.1 example (2), Unresolved Items 83-04, Item C, 83-03 Item C and 83-02 Item C.2 and Followup Item 81-01:

These items were recapitulated in inspection report 99900277/85-01. They are under continuing review. They will remain open until evaluation of the requalification program is completed and validity of prior tests affected by the items can be determined.

E. OTHER FINDINGS OR COMMENTS:

1. During this inspection, the NRC inspectors reviewed corrective actions from previously identified nonconformances, reviewed data from test plan (TP) No. 4804 on CXLPE samples which had been generated since the last inspection, observed post-LOCA sample evaluation testing on these samples, and reviewed related documentation. While the NRC is following this program closely to verify compliance with regulatory requirements, the responsibility remains with individual licensees who intend to utilize the results of these tests in support of qualification to evaluate them with respect to the requirements of specific plant applications.

   a. CXLPE insulated, Firewall III test specimens and their preconditioning are described as follows:

      Note: Documentation indicated that all samples received 200 Mrads combined radiation aging and accident gamma dose.

      (1) A1: Seven conductor (7/C), completed cable section #14 AWG, 30 mil insulation, control cable. (Neoprene jacket), aged 168 hours at 121°C.

      (2) A3: Single conductor (1/C) from type A aged 950 hours at 150°C.

      (3) A5: Single conductor from type A, no thermal aging.

      (4) B1: Single conductor from a 7/C, #14 AWG, 25 mil insulated control cable aged for 950 hours at 150°C.

      (5) B4: Same as B1, but not thermally aged.

      (6) C2: 2/C, #20 AWG, 20 mil insulation, type kx thermocouple extension lead. (Hypalon jacket), (post-Design Basis Event (DBE) monitoring), aged for 168 hours at 121°C.

(7) D2: 2/C, #16 AWG, 20 mil insulation, instrument cable (Neoprene jacket), aged for 168 hours at 121°C.

(8) D4: Single conductor from D type cable aged for 950 hours at 150°C.

(9) D5: Single conductor from D type cable, not thermally aged.

(10) E1: Single conductor, #6 AWG, 45 mil insulation, power cable aged for 950 hours at 150°C.

(11) E3: Single conductor, #6 AWG, 45 mil insulation, power cable, not thermally aged.

b. The CXLPE testing observed consisted of the following:

(1) Removal of samples from LOCA chamber and initial visual examination.

(2) Separation of samples and detailed visual examination.

(3) Straightening of samples, marking lengths to be immersed for the voltage withstand test.

(4) Coiling of samples on mandrels of a diameter equal to 40 times overall sample diameter and visual examination.

(5) Immersion of samples in tap water, one hour soak*, 80 VAC/mil (of insulation wall thickness) voltage withstand test (dielectric proof test).**

(6) Eighteen hour soak and insulation resistance (IR) tests.

(7) Additional 80 VAC/mil voltage withstand tests and 5 kv test on one sample.

(8) Close visual examination including microscopic.

*The one hour soak is a deviation from TP 4804 which required a six hour soak. **Also, only three A1 conductors energized during the LOCA underwent the voltage withstand test where the test plan called for all conductors to be tested. These approved deviations from TP 4804 were noted in the record. The version of the test report reviewed in the third part of this inspection documents the soak times with justification. An upcoming revision is expected to justify testing 3 conductors.

c. Results of initial CXLPE voltage withstand tests and IR measurements:

Sample	Conductor #	Proof Voltage	Pass/Fail	IR (500 VDC)
A1	2	2400	Pass	SAT
	4	2400	Pass	SAT
	6	2400	Pass	SAT
A3		2400	Pass	SAT
A5		2400	Pass	SAT
B1		2000	Fail	-
B4		2000	Fail	-
C2	1	1600	Pass	SAT
	2	1600	Fail	-
D2	1	1600	Pass	SAT
	2	1600	Pass	SAT
D4		1600	Fail	-
D5		1600	Fail	-
E1		3600	Pass	SAT
E3		3600 (5000)	Pass	SAT

Rough correlation of raw data indicated that faults occurred in specimens with 25 mil and thinner insulation and that the unjacketed condition may indeed constitute a more severe test. No correlation was observed between preconditioning and the voltage withstand test results.

d. Other Observations

The Neoprene jackets were split longitudinally their whole length and had circumferential splits at about 1 to 2 foot intervals. The Hypalon jacket only had short (<1 cm), shallow, longitudinal cracks. During the separation of the cables from each other, strong adhesions were observed at points at which the cables' bare insulation had been in contact with the heat shrink splice sheathing material. There were weaker adhesions at points of contact of the cables' own insulation material with itself, and weak adhesions between jacket materials and cable splices and bare insulation. Although Rockbestos personnel appeared to exercise caution in separating the specimens, (in many instances, at splice crossover points, they did so surgically), several cables still suffered losses of insulation material due to transfer to the adhering splice at the crossover

points. A few specimens had pieces (up to approximately 2 cm) of insulation pulled off exposing the bare conductor despite efforts to prevent this.

During a detailed visual examination, sites recognized as points of damage were identified and documented before and after the straightening and 40D coiling. Prior to the voltage withstand test, the crossover points where cable insulation had been severely damaged were repaired by wrapping with high voltage insulating tape. These points were near the ends of unjacketed D and E specimens which shortened their immersible length from the required 10 feet to 9 feet for D4 and D5 and 8 feet for E1 and E3. This was documented as an approved deviation from the test plan and specifications.

e. Failure Analysis

(1) Rockbestos' documented microscopic examination of coiled samples had revealed that failure points on B1 and B4 coincided with still visible torn or reduced insulation points. The failure points on D4 coincided with one of the indentations from mandrel hooks during thermal aging. The failure point on D5 was large and local evidence of preexisting damage was destroyed. However, the location of the fault was consistent with the regular spacing (about every 8") of the indentations. Removal of enough of the jacket on sample C2 to locate the fault (about 3 feet from one end) revealed that the proof test failure had destroyed any evidence of conditions which may have lead to failure. The NRC inspectors examined photographs of these faults taken through the microscope and performed microscopic examination of the samples themselves confirming the above observations.

(2) The NRC inspectors reviewed the documented results of retests of failed specimens (including additional coiling and soaking) conducted after repairs and modifications were made to remove the alleged handling damage faults. The worst of the damaged or indented insulation points on samples B1, B4, D4, and D5 were taped. According to the records, each then passed a 5 minute, 80 VAC/mil test and 1 minute, 100 VAC/mil test. The fault in the Alumel (yellow) conductor of C2 was removed. This specimen was retested in two sections. The unjacketed

three foot section passed a 5 minute 80 VAC/mil and 1 minute, 100 VAC/mil proof test. The six foot section, which had four feet of jacket remaining, failed immediately. Microscopic examination of this fault revealed an apparent razor cut presumably caused by the razor used to remove the jacket earlier when looking for the original fault. After removal of the alledged razor cut fault the sample passed the 80 VAC/mil (5 minute) and 1 minute 100 VAC/mil withstand test.

(3) The NRC inspectors subsequently examined the "razor" fault under the microscope as well and compared it to a cut deliberately made in another piece of the sample and noted the similarity. The inspectors reviewed the results of IR measurements made after the retests. These results were consistent with sample size and conditions.

(4) Test documentation and interviews of Rockbestos personnel indicated that they have concluded that the failures were random, anomalous failures most of which are attributable to problems encountered during, and peculiar to the testing and therefore were not common mode failures. This, they contend, was sufficient justification for retesting either different aged specimens of the same material/type or retesting the failed samples after removing and/or repairing faults. They chose the latter method (applying extra margin in several ways to enhance credibility) on the basis of specimen availability, time constraints and having the most performance data on these particular specimens.

2. In the second part of this inspection, the NRC inspectors observed the initial phases of LOCA simulation on the RXLPE insulated FW III samples conducted under TP 4805, and reviewed related documentation. The following comments are germane:

a. The chemical spray solution was analyzed prior to use to ensure that it had been properly prepared. The initial measured pH of 10.7 became diluted to approximately 9.0 near the end of the spray period due to recirculation with condensate. Some difficulty was experienced in adjusting

the spray flow rate to maintain the 1.2 gpm minimum required. It was finally stabilized at 1.1 gpm and this was documented as a test anomaly.

b. Prior to the start of the first transient, the NRC inspectors checked all voltage and current settings for the cable samples. The voltage for cable A2 was observed to be set incorrectly at 300 VAC instead of the required 600 VAC. The apparent cause of this was that the meter (on which 300 VAC and 600 VAC fall on the same increment) was set on the wrong scale or range setting.

Rockbestos personnel overlooked this error during a check of channel voltages since no check of data logger output readings is made against meters and test plan requirements, nor is one explicitly required. Secondly, since some cables are specified to be energized to 600 VAC and some to 300 VAC, the 300 VAC digital reading on the datalogger was not considered suspect. The NRC inspectors prompted the operator to re-check the readings and verify them correct prior to starting the test after it became apparent that they would have gone unnoticed. This was done and the error was then discovered and corrected.

Based on this event, the NRC inspectors recommended that some formal checks of all test parameters against specifications be required by procedures to be conducted and documented. Rockbestos personnel agreed that this action would be prudent. Their action in response to this concern will be examined in a future inspection.

c. Rockbestos had aged twice the number of specimens which could be accommodated in the LOCA chamber. They indicated that sample selection was random between alternate preconditioned specimens of each type with the exception of one 1/C sample which was rejected based on its physical appearance being significantly poorer than the others.

d. Both transients of the TP 4805 temperature/pressure profile were observed. Rockbestos LOCA simulation apparatus has been considerably upgraded by the installation of large, solenoid operated steam reducer bypass valves. Approximately 10 seconds were required to achieve 280°F and 50 seconds to achieve 340°F during the transient ramps. The system was previously capable of no faster than 2 minute ramp times.

e. During the initial 24 hours, with chemical spray on, IR measurements were taken during the second transient at 340°F, 320°F, 300°F, and during the 250°F plateau. IRs varied consistently with temperatures as well as with sample length and size. A comparison of these results with CXLPE IRs indicated that the RXLPE had consistently higher IRs by about one order of magnitude.

f. The test was interrupted on the second day to inspect thermocouple and sample position and to repair a grounded sample lead wire which resulted from a pressure extrusion of two of the cables and one thermocouple lead.

No nonconformances were identified during the testing observed.

3. In the third part of this inspection, the NRC inspectors observed post-LOCA sample evaluation testing on the RXLPE insulated Firewall III cable specimens, reviewed related documentation and reviewed Rockbestos Qualification Report (QR) 5804 on the CXLPE cables. Also reviewed was the status of testing on the RSS-6-100 series coaxial cable samples including examination of the samples which had just been returned from the irradiation facility.

a. The RXLPE set of samples consisted of specimens from each of the same types as those from which the CXLPE specimens were chosen. The specimens were A2, A3, A6, B1, B4, C1, D1, D3, D6, E1, and E4. The configuration of each corresponding type is described in paragraph E.2.a above. The RXLPE samples were identical to the CXLPE samples except for insulation material and the fact that in RXLPE 7/C completed section sample A2, the individual conductors were color coded instead of having number designations as did their counterparts in the corresponding CXLPE sample (A1).

Preconditioning (thermal and irradiation aging including the accident dose) for each RXLPE sample was the same as the preconditioning of the corresponding CXLPE sample as described also in paragraph E.2.a above.

b. Post-LOCA sample evaluation testing of the RXLPE samples consisted of the same operations as described in paragraph E.2.b above for the CXLPE samples with the following exceptions:

(1) The RXLPE samples had been mounted on a mandrel which was wrapped with Teflon tape and were arranged to prevent contact between themselves and contact with the heat-shrink sleeves on their splices with extention leads. These measures were sucessful in preventing the kind of adhesions and associated damage experienced with the CXLPE samples. Therefore, separating the samples from each other was not necessary.

(2) For the same reason, the repairs and modifications done to the damaged CXLPE samples were not necessary on the RXLPE samples.

During this set of tests, TP 4805 was deviated from as was TP 4804 in that only those conductors in A2 which had been energized during the LOCA (white, blue and green) were put through post-LOCA tests. Also the samples were given only a one (1) hour soak prior to the voltage withstand test instead of the six hours required by TP 4805. They did soak for six hours prior to IR measurements. These approved deviations, like those from TP 4804, were recorded and are expected to be documented with justification in the QR. Noted during review of QR 5804 (CXLPE), was that the testing of only those conductors energized in the LOCA had not yet been justified. Rockbestos stated that this was being incorporated into a forthcoming revision to QR 5804.

c. Test Results: RXLPE post-LOCA sample evaluation testing was sucessful in terms of specimens meeting acceptance criteria. All the samples were observed to pass the 80 VAC/mil voltage withstand test. IR measurements were observed to be consistent with expected values in the 10^{12} to 10^{13} ohm range.

d. Other Observations: Degradation sustained by the Neoprene and Hypalon jackets of the RXLPE samples during the qualification test series, most notably during the LOCA simulation, was similar to that experienced in the CXLPE tests. See paragraph E.1.d above. Detailed examination of the samples indicated deposits of a dark, powdery substance, particularly at points of contact of the cables and the mandrel. Two shallow indentations in the insulation of the E type cables where they rested on the mandrel were identified. No other visible damage to cable insulation was found.

No nonconformances were identified during observation of this set of tests.

4. General Comments

a. In TP 4805 (RXLPE), unlike 4804 (CXLPE), the requirement to set the voltage source milliamp leakage trip on maximum sensitivity (minimum value) had been eliminated since at maximum sensitivity, the source would trip on currents as low as charging currents. However, they were observed to be set at minimum sensitivity at which, it was demonstrated, a full-scale, leakage meter value of 250 mA was insufficient to trip the voltage source. This was justified by the Rockbestos rationale that any significant leakage currents indicative of a latent fault would tend to grow until the voltage set tripped. During the first five minutes of the second transient, the NRC inspectors watched for evidence of leakage on all samples. No leakage was indicated on the 0-250 mA range leakage meters available.

b. In reviewing documentation related to the requalification program, the NRC inspectors evaluated Rockbestos analyses to (1) support the claim that having used a significantly longer than 10 second ramp time (up to 5 minutes) during the CXLPE LOCA did not affect the test validity for cables and (2) to show that their LOCA profile adequately enveloped Main Steam Line Break (MSLB) conditions for cable.

Rockbestos contended that cable insulation thermal response would be slow compared to a 10 second ramp. This is based on (1) comparison of the thermal conductivities of XLPE, PE, glass and metals, (2) the argument that thermal shock considerations were not pertinent since there is no pressure boundary or seal involved and (3) the fact that the insulation consists of a single layer of CXLPE so that differential thermal expansion of dissimilar materials would not be a factor.

To show that the LOCA profile adequately enveloped MSLB conditions, Rockbestos maintained that the short, MSLB, high temperature transient would not cause the cable surface temperature to exceed 346°F based on an experiment done in air to estimate the convection heat transfer coefficient at a 0.615" diameter cable surface. The experimental value was used to calculate the temperature response of a 0.112" diameter cable in an MSLB environment. The analysis was then extended to justify that no cables need be exposed to an MSLB environment, but it failed to show that the experimentally estimated, convection heat transfer coefficient was either the same as or conservative with respect to that which would exist in an MSLB. This will be reviewed further during future inspections.

c. The NRC inspectors reviewed qualification test plan TP 5802 for Rockbestos adverse service coaxial and triaxial cable (including RSS-6-100 series coaxial cables), reviewed associated data generated thus far and examined the specimens which had recently been returned from the irradiation facility. The samples on the mandrel upon which they had been irradiated were identified as prescribed in the documentation and there was no apparent degradation noted upon cursory visual examination. The irradiation report was not yet available for review, but procurement documents were reviewed and found to be in compliance with regulatory requirements. The following comments pertain to the coaxial cable documents examined:

(1) TP p.6: TP 5802 specifies IR values of 10^6 megohms/1000 ft. With 18 ft samples, it will be necessary to measure values in the 10^7 to 10^8 megohm range to demonstrate conformance to this specification. Rockbestos is reevaluating the specification.

(2) TP p.7: References to particular Sandia National Laboratories (SNL) tests are not given to support the assertion that synergistic effects of simultaneous radiation and thermal aging have been considered and determined not to be present. The next report revision is to include those references.

(3) TP p.11: Soak time specifications omitted from the current revision of the TP will be included in the next revision.

(4) TP p.24: The specification for LOCA chemical spray flowrate is given as 15 gpm instead of the correct value of 1.5 gpm. This typographical error is to be corrected in the next revision to TP 5802.

(5) The initial functional check data sheet did not include the timer in the list of equipment used. The Rockbestos Technician corrected this and added the timer's identifying information to the TP 4805 test log book as well.

(6) The documentation included aging calculations which used an activation energy of 2.75 eV for the coaxial and triaxial cable insulation (XLPE). The inspector verified that the aging calculations were correct for the values used, but the testing used as a basis for the calculations will be reviewed in a future inspection to verify its applicability to the cable currently being tested.

4/22-24/85 BEGINNING PART I of II

PERSONS CONTACTED

Company ROCKBESTOS Dates 4/22/85

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X Pre-Inspection Conference ____ Post-Inspection Conference

NAME(Please Print)	TITLE(Please Print)	ORGANIZATION(Please Print)
S. LITTLEHALES	QA MGR	ROCK
P. SHORT	~~MGR QC/TEST~~ ACTING MGR QUAL+TEST	ROCK
J. MORGANELLI	SUPERVISOR QUAL+TEST	ROCK
M. JACOBUS	SNL CONSULTANT	SNL
GENE DE QUANO	TECHNICAL DIRECTOR	ROCK
J. ALEXANDER	EQ~~PTE~~	USNRC
R. GEHM (SR)	MGR. ELEC. + PROD. ENGR.	ROCK

PERSONS CONTACTED

Company ROCKBESTOS

Dates 4/22-24/85 | SEPT 11-12, 1986

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Inspector SD ALEXANDER

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NAME(Please Print)	TITLE(Please Print)	ORGANIZATION(Please Print)
PAUL SHOT	MGR of QUAL & TEST	ROCK BESTOS
GEORGE LITTLEHALES	QA MANAGER	"
GENE D'AQUANNO	TECHNICAL DIRECTOR	"
RICHARD S. THAYER	VP & GM	"
JOE BIGIO	MATERIALS ENG	"
BOB GEHM (SR)	SENIOR TEST ENGINEER	"
BOB GEHM (JR)	EQ LAB TECHNICIAN	"
JUDY DURIN	QA ASSISTANT	"
JIM MORGANELLI	PROJECT ENGINEER	"

INSPECTOR S. D. ALEXANDER ROCKBESTOS 4/~~20~~-24/85

SCOPE _____

DOCUMENTS EXAMINED

DOCKET NO. 99900277

REPORT NO. 85 - 02 PART I

PAGE 1 OF 2

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
(1)	QUALITY PRO	Q-25B	1	1-21-85	QUALITY PROCEDURE ON TRAINING OUTLINES-QA/QC PERSONNEL
(2)	QA DOC	—	—	2-6-85	CAL LAB SURVEY on EIL INST. INC. BY J. DURNIN
(3)	RPT	84008		4/17-24/84	ECL CAL REPORT/CERT
(4)	RPT	84008A		11/8/84	ECL EQ TE CAL REPORT/CERT
(5)	MEMO	P/O CPM		4/18/28	FM. GLITSLEMALES - PART of ~~QUAL~~ CAL. REQ. MAN. - PO's for PO's for 2 SIDE CAL
(6)	MEMO	P/O CPM		1/29/85	FM ~~J. DURNIN~~ G. LITSLEMALES .. .. .. (CHANGES SPEC from 1.25 TO 1.5 or ±2.5
(6)	MEMO	—	—	1/29/85	FM J. DURNIN ADRESSED TO ECL'S MEETING OF QA CAL REQMNTS
* (7)	QC DOC	—	—	1/14/80	CAL LAB SURVEY on ECL DONE BY P.E. RIEMANN
(8)	PO	15074	—	3/22/85	TO EIL INST. LABS for QUAL of EQ TE & GEN. TE
(9)	PRO	—	7	3/27/85	TECH MAN for CLASS 1E QUAL TESTS
(10)	PRO	—	—	1/31/85	ROCK CO. CAL PRO MAN

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT
P.O. - PURCHASE ORDER
INM - INTERNAL MEMO

LTR - LETTER

INSPECTION C.V. FLEXITALLIC — ROCKBESTOS — WYMAN GORDON — DOCKET NO. 99900411

SCOPE _____ — DOCUMENTS EXAMINED AND 9/11-12/85 — REPORT NO. 85-082 PART 2

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
(1)	PRO	—	—	5/23/85	DATA LOGGER RECORDING PROCEDURE
(2)	PRO	—	—	5/23/85	PROCEDURE for PREP of SPRAY - NO REQ. TO RECORD ANYTHING LIKE PH of MIXTURES, AMOUNTS ADDED ETC
(3)	TP	TP4805	2	5/85	TEST PLAN 4805 IN SUPPORT of QUALIFICATION of FW III CXLPE GENERIC NUC INCID. CLASS 1E SOURCE IN NUC GEN STATIONS
(5)	CL	TP 4805 APP XI	1	6/84	CLASS 1E QUALIFICATION CHECK LIST
(6)	LTR		—	5/9/85	TO ADD. COMMITTEE INF. of 4804 RESULTS
(7)	DATA	TP4804	—	VAR	TEST LOG BOOK (LABORATORY NOTEBOOK)
(8)	PRO	ADP 6	1	1/23/85	AUTOCLAVE OPERATING PROCEDURE (PART of 10)
(9)	PRO	—	8	1/20/85	TECH MANUAL for CLASS 1E QUAL TESTS
(10)	PRO	—	5	2/7/85	QT PROC. MAN.
(11)	DATA	TP4805	—	2/23-2/24 ~~VAR~~	TEST LOG (LAB NOTEBOOK)
(A)	DATA	4805	—	VAR	4805 DATA BOOK
(13)	DATA	4804	—	VAR	4804 DATA BOOK (IR DATA)
(14)	PRO	TP 5802	1	9/3/85	QUAL TEST PLAN FOR CLASS 1E COAX & TRIAX
(15)	RPT	QR 5802	1	SEP 85	QUAL REPORT ON CHEM XLPE FIREWALL III
(16)	FILE	—	—	VAR	(INCLUDES ISOMEDIX PO W-520-) QUAL RECALL FILE for TP 5802 COAX & TRIAX

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT
P.O. - PURCHASE ORDER
INM - INTERNAL MEMO

LTR - LETTER
RPT - REPORT

LOG A

PERSONS CONTACTED

Company Rockbestos

Docket/Report No. 99900277/85-02 PARTS I & II & III

Dates 4/22-24/85 AND 9/11-12/85

Inspector M. Jacobs

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___ Pre-Inspection Conference ___ Post-Inspection Conference

NAME(Please Print)	TITLE(Please Print)	ORGANIZATION(Please Print)
G. Littlehales	QA Mgr.	Rockbestos
P. Short	Mgr. - QC & Test Acting Mgr. - Qual. TEST	"
J. Pergonelli	Supervisor - Qual. & Test	"
G. DeQuano	Technical Director	"
J. Durgin	QA	"
R. Gehm (Sr)	Mgr. - Elec. & Prod. Engr.	"
R Gehm (Jr)	Test Technician & Cal. Tech.	"

3 4/22-24/85
5/22-24/85

INSPECTOR R. Jaeris
SCOPE

DOCUMENTS EXAMINED

DOCKET NO. 99900277
REPORT NO. 85 - 02 PARTS I & II
PAGE 1 OF 2

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	TP	4804	12/84	12/84	FW III Chemically Cross-Linked Polyethylene Generic Nuclear Incident Class 1E Service in Nuclear Generating Power Stations
2	PRO	—	5	2/7/85	Qualification Test Procedure Manual (In part) for TP 4804
3	PRO	—	—	9/12/84	Checklist for Class 1E Qualification Tests (for several specimens used in TP 4804)
4	F.O.	13914 NH	—	11/7/84	F.O. for radiation of TP4804 samples.
5	LTR	—	—	12/12/84	Certification for radiation service per F.O. 13914 NH
6	DAT	—	—	—	Supporting data for TP4804 test — chart recordings and datalogger output through 2/25/85
7	TP	4805	3/85	3/85	FW III Irradiation Cross-Linked Polyethylene Generic Nuclear Incident Class 1E Service in Nuclear Generating Power Stations (In part)

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT

LTR - LETTER
TP - Test plan
DAT - Data
— - —
— - —

INSPECTOR M. Jacobus

SCOPE

PROPRIETARY

DOCUMENTS EXAMINED 9/11-12/85

DOCKET NO. 99900277

REPORT NO. 85-02 part III

PAGE 2 of 1

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	QR	QR5804	0/1/85	8/27/85	Report on Qualification Tests for Firewall III Chemically Cross-Linked Polyethylene Construction for Class 1E Service in Nuclear Generating Stations.
2	TP	TP5802	1	8/26/85	Test Plan 5802-Qualification Test Procedure Raytheon Offshore Service Coaxial and Triaxial Cable Generic Nuclear Incident Class 1E Service in Nuclear Generating Power Stations
3	NB	—	—	—	Notebook containing supporting documentation for TP5804

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT
PA - PURCHASE ORDER

LTR - LETTER
QR - Qual. Report
TP - Test Plan
NB - Notebook

PERSONS CONTACTED

ENG of 85-01 PART III of III

Company ROCKBESTOS

Date 9/12/85

Docket/Report No. 99900277/85-02

Inspector ———

Page 1 of 1

___ Pre-Inspection Conference X Post-Inspection Conference

NAME (Please Print)	TITLE (Please Print)	ORGANIZATION (Please Print)
S. ALEXANDER	EQ & TEST ENGR	NRC/~~IE~~/QAVT/VPB/EQIS
M. JACOBUS	TECH CONSULTANT TO NRC	SNL
G. LITTLEHALES	QA MGR	ROCKBESTOS
~~P. SHORT~~	~~MGR QC & TEST~~ ~~ACTING MGR EQUIP QUAL & TEST~~	
J. MORGANELLI	SUPR. EQUIP QUAL & TEST	
R. GEHM (SR)	MGR ELEC & PRODUCT ENG.R.	
R GEHM (JR)	EQ TECHNICIAN	