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TO: Chris Brown -NRC

DATE: 8/14/96

VA

CC

FROM: Gyo Shinozaki

Please find attached a revised copy of the Japan Radiisotope Association Test Report for our AI - Series detectors. Obviously I prepared these two sheets today! I consolidated the information on the two separate reports submitted in our AI - Series application. Page 2/3 is the consolidated version of the JRIA report. I included a "test Criteria" section to explicitly state, per JIS Z4B21, the criteria used for judgement. A "test judgement" section has been modified to expressly state the final results. Page 3/3 is a modified test classification table with the puncture test included. The test is performed per JIS Z4B21. I will send you a translated version of the section of JIS Z4B21 that indicates how the test is to be performed by tomorrow afternoon (Pacific time). Please call me with any comments you may have! Thanks for all your help.

Japan Radioisotope Association Test Report

| | |
|-------------------|---|
| Test Item | Hochiki Corporation Model AL Series Smoke Detector |
| Test Material | Alpha foil source for smoke detector with holder |
| Test Method | Per JIS Z-4821 1981 (ISO 1677-1977, ISO 2019-1980) |
| Test Organization | Japan Radioisotope Association & Hochiki Corporation |
| Test Date | Jan. 19, 1988- Feb. 2, 1988 and Apr. 17, 1996 - Apr. 24, 1996 |
| Test Points | Test Type- Classification |
| | Temperature- 3 |
| | Pressure- 2 |
| | Shock- 2 |
| | Vibration- 2 |
| | Puncture- 2 |
| Test Criteria | Upon subjecting sample materials to the above tests, wipe tests are to be performed per JIS Z-4821-1981. Test results are not to exceed 185 Bq. |
| Test Judgement | All wipe tests showed results lower than 185 Bq. |

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| Test Item/ Classification | 2 | 3 |
|---------------------------|---|--|
| Temperature | -40°C (20 min), 80°C (1 hour) | -40°(20 min), 180°C (1 hour) |
| Pressure | 25 kPa abs. Atmosphere pressure | 25 kPa abs. 2 Mpa abs. |
| Shock | 1 m/ 50 g | 1 m/ 200 g |
| Vibration | 10 min. x 3 times 25 ~ 500 Hz Maximum Acceleration Vibration: 49 m/s ² (5G) | 10 min. x 3 times 25 ~ 500 Hz Maximum Acceleration Vibration: 49 m/s ² (5G) And 50 ~ 90 Hz with vibration 0.635 mm And 90 ~ 500Hz with maximum acceleration vibration 98 m/s ² (10G) |
| Puncture | 1 m/ 1 g | 1 m/ 10 g |

HOCHIKI



LOREN L. LEIMER

NS PROJECT ENGINEERING TEAM LEADER

HOCHIKI AMERICA CORPORATION

5415 INDUSTRIAL DRIVE

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FACSIMILE TRANSMITTAL FORM

DATE: July 2, 1996

TO: Chris Brown

COMPANY: US Nuclear Regulatory Commission

REFERENCE: JIS Z-4821

NUMBER OF PAGES INCLUDING COVER PAGE: 3

COPIES TO:

COMMENTS:

Please review the information that I received from Hochiki Corporation regarding the testing of the RI to the JIS Z-4821 standard. I will call you to make sure that you have received this copy.

Loren

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MEMORANDUM

DATE: July 2nd, 1996
TO: Mr. Loren Leimer/S.O.M., NS Project
CC: Mr. Sy Saito/President
FROM: Nick Niwa/Sales Div.
RE: Japanese Radio-Isotope Association Testing

Thank you for your urgent request for me.

This is my reply to your request memo dated on July 1st, 1996 on the above subject.

I have just received the attached detailed information on testing from HC, however, it is all in Japanese. So, to meet your request, I would like to explain the following.

Now in Japanese Radio Isotope Association, they are doing their evaluation for sealed radioactive sources with "2" & "3" classification as the following.
With this condition, they can judge whether it is "OK" or "NG" for JIS Z 4821 1993.

If you need any more information or questions on this matter, please feel free to contact me.

1. Criteria: JIS Z 4821 1993
2. Related International Standard: ISO 1667 (Sealed radioactive source-
General)
ISO 2919 (Sealed radioactive source-
Classification)
3. Condition for Each Classification of Sealed Radioactive Sources:

| Test Item / Classification | 2 | 3 |
|----------------------------|--|--|
| Temperature | -40°C (20 min.), 80°C (1 hour) | -40°C (20 min.), 180°C (1 hour) |
| Pressure | 25 kPa abs. Atmosphere pressure | 25 kPa abs. 2 Mpa abs. |
| Vibration | 10 min. × 3 times 25 ~ 500 Hz Maximum Acceleration Vibration: 49 m/s ² (5 G) | 10 min. × 3 times 25 ~ 500 Hz Maximum Acceleration Vibration: 49 m/s ² (5 G) And 50 ~ 90 Hz with vibration 0.635 mm And 90 ~ 500Hz with maximum acceleration vibration 98 m/s ² (10 G) |
| Shock | 1 m / 50 g | 1 m / 200 g |