

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 AUTH. NAME AUTHOR AFFILIATION
 MEENAN, W. Kaman Instrumentation Corp.
 RECIP. NAME RECIPIENT AFFILIATION
 BAER, R. L. Office of Nuclear Regulatory Research, Director (Post 86072)

SUBJECT: Provides listed info in response to 870317 .ltr re
 deficiencies in particulate channel of RU-1 radiation
 monitor. Analysis to determine effect of radionuclides on
 monitor response complete. Supporting info encl.

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NOTES: Standardized plant. 05000528
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	LICITRA, E	1 1	DAVIS, M	1 1
INTERNAL:	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	ARM TECH ADV	1 1	NRR CRUTCHFIELD	1 1
	NRR VARGA, S	1 1	NRR/DEST/ADE	1 1
	NRR/DEST/ADS	1 1	NRR/DLPQ/QAB	1 1
	NRR/DOEA/EAB	1 1	NRR/DOEA/GCB	1 1
	NRR/DRIS/WRB	1 1	NRR/PMAS/ILRB	1 1
	REG FILE 01	1 1	RES DEPY GI	1 1
	RES/DE/EIB	1 1	RGN1	1 1
	RGN2	1 1	RGN3	1 1
	RGN4	1 1	RGN5	1 1
EXTERNAL:	INPO RECORD CTR	1 1	LPDR	1 1
	NRC PDR	1 1	NSIC SILVER, E	1 1
NOTES:		1 1		

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KAMAN

January 28, 1988

United States Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. Robert L. Baer
Engineering & Generic Communications Branch

Dear Mr. Baer:

The following is in response to your letter of March 17, 1987, regarding deficiencies in the particulate channel of the RU-1 radiation monitor at the Palo Verde Nuclear Generating Station (PVNGS).

The RU-1 monitor was supplied to PVNGS by Kaman per the requirements of Specification 13-NM-997. The requirements of NRC Regulatory Guide 1.45 were not imposed by the specification. The monitor was supplied as a safety related, quality class Q1E, containment building atmosphere monitor with particulate, iodine, gas, and dew point hygrometer channels. Apparently, ANPP and/or their agent, Bechtel Power Corporation, reviewed the monitor design and were satisfied that it was adequate to satisfy the requirements of the Regulatory Guide. The documentation supplied with this monitor was not erroneous, but was unclear as to the proper detector efficiency to be used. This was clarified via a letter from Kaman to ANPP on December 4, 1986. This documentation (Report of Calibration for Palo Verde Baseline Moving Filter Particulate Monitors, Kaman Report No. K83-28 U(R)) will be revised by Kaman to avoid future confusion.

The EPROM supplied by Kaman for this monitor did indeed contain an incorrect flow conversion factor (reference PVNGS EER 86-SQ-113). This error was corrected by Kaman shortly after it was identified.

As for generic implications of this error, Kaman is not aware of any other utility utilizing Kaman monitors to satisfy the requirements of Regulatory Guide 1.45. Hence, the reported deficiency is unique to PVNGS.

Kaman has verified the facts of your letter as stated above. Response to your specific concerns are as follows:

1. The RU-1 monitor is unique to PVNGS. This specific deficiency does not exist in any other facility with Kaman monitors. Kaman is in the process

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of reviewing all software modifications to all customers to determine if the software's ability to perform its design function has been compromised as a result of any modification. This includes complete testing of those modifications if existing evidence of their testing does not appear adequate.

2. Should potential problems be encountered, each plant with that particular problem will be notified promptly by telephone and in writing. The reporting requirements of 10 CFR Part 21 will be followed, if applicable.
3. To prevent recurrence, Kaman's procedures are being modified to require more extensive testing of software modifications.

Kaman has also completed an analysis to determine the effect of short lived radionuclides on monitor response. This was accomplished utilizing a software simulation program. A summary of the results is attached. These results indicate that the larger the fraction of short lived particulates, the longer it takes the software algorithm in the monitor to stabilize after a filter change and provide an accurate reading of sampled activity. However, if the sampled activity increases, the algorithm can detect an alarm condition regardless of its overall accuracy.

The results of the simulation program also indicate that the monitor's sensitivity is not greatly affected by a relatively high background reading.

Kaman is unable to comment as to whether or not ANPP is meeting its licensing commitments. Until late of 1986 we were not aware that this monitor was being used to meet the requirements of Regulatory Guide 1.45, and we presently have no information as to how the monitor is being operated or maintained.

You may contact Mr. Carey Matthews, Customer Services Manager, at (303) 599-1454 or myself at (303) 599-1660, if you desire further information.

Sincerely,



William Meenan
Project Engineer

WM:tt

Encl.

cc: C. Matthews
G. Boyle

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1. The first part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right. The names are: John Smith, James Brown, and William Jones. The addresses are: 123 Main Street, New York, NY; 456 Elm Street, New York, NY; and 789 Oak Street, New York, NY.

2. The second part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are written in a more formal, printed hand. The list is organized into two columns, with names on the left and addresses on the right. The names are: John Smith, James Brown, and William Jones. The addresses are: 123 Main Street, New York, NY; 456 Elm Street, New York, NY; and 789 Oak Street, New York, NY.

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