

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 VISSING, G.S.

SUBJECT: Discusses leak detection sys in support of LBB application
 of portions of RHR sys at RE Ginna Nuclear Power Plant.
 Description of successful leak detection event that occurred
 on 980819, provided.

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ROBERT C. MECREDY
Vice President
Nuclear Operations

September 16, 1998



U. S. Nuclear Regulatory Commission
Document Control Desk
Attn: Guy S. Vissing
Project Directorate 1-1
Washington, D.C. 20555

Subject: Discussion of Leak Detection System in Support of Leak-Before-Break (LBB)
Application of Portions of Residual Heat Removal (RHR) System (TAC No.
MA0389)
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Vissing:

On September 3, 1998 at 10:30 AM, RG&E and NRC personnel held a telephone conference to discuss NRC concerns on the RG&E response to the request for additional information (RAI) regarding RG&E's LBB application of portions of RHR system. The NRC had independently generated critical flaw sizes for the hot leg portion of the piping using more conservative J-R resistance curves and methodology documented in NUREG/CR-6235. Applying the margins specified in NUREG-1061, Vol. 3, the minimum leakage detection requirement becomes approximately 0.25 gpm. RG&E's response to the RAI asserted that this is within the capability of Ginna's leak detection system. NRC personnel were looking for a level of confidence of this capability with specific examples of actual events. 1/b

Dr. Fred Mis, from the RG&E Radiation Protection/Chemistry Dept. described a successful leak detection event that occurred on August 19, 1998. This event involved R-11, Containment Air Particulate Monitor, which is the most sensitive instrument currently available at Ginna to detect reactor coolant system (RCS) leakage into containment. 9001

R-11 is a Victoreen Beta Scintillator Detector covered with a thin window of titanium. It consists of a moving filter and a detector. Victoreen generated the initial calibration and response curves for R-11 in 1986, when it was installed. The calibration technique involved four radioactive sources, C-14, Tc-99, Cl-36 and Sr/Y-90. These sources were chosen because they allowed verification of the linearity of the detector for four different energy ranges of betas (0.05 MeV, 0.10 MeV, 0.27 MeV, and 0.9 MeV respectively). In 1997, RG&E performed a periodic calibration of R-11 using Procedure CPI-MON-R11, and the results were consistent with historical values.

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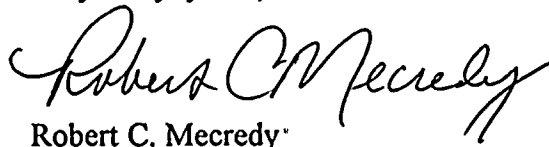
On August 19, 1998 at 2:30 AM, operations personnel noted a trend upward on R-11 response (see Attachment 1). Background readings for R-11 had varied from 90 cpm to 120 cpm, but by 5:30 AM, the count rate has increased and stabilized at 150 to 200 cpm. Analysis of a containment air sample showed radioisotopes of the types Na-24, Mo-99, and I-133, with a total concentration of $2.0\text{E}-11$ uCi/cc. The operators later pinpointed the leak at a vent connection on the Letdown piping with 2" nominal diameter. The leak was estimated to be from 0.05 - 0.10 gpm. In the past, there have been other instances where R-11 detector has indicated higher count rates and triggered a search using walkdowns or noting liquid inventory changes of RCS make-up system.

NRC asked why RG&E has more success with our Containment Air Particulate Monitor than other plants. RG&E cited the following possible reasons:

- a. Ginna containment is relatively small, having a volume of approximately 970,000 cu ft.
- b. Effective recirculation of air inside containment.
- c. R-11 is a second generation, improved design detector which was installed in 1986.

Historical background readings for R-11 were attributed to electronics and ambient containment gases. It should be noted that RCS radioactivity consistent with no fuel cladding leakage (clean fuel) was able to trigger an increase of R-11 count rate to a point where operators were alerted.

Very truly yours,



Robert C. Mecredy

Attachment

xc: Mr. Guy S. Vissing (Mail Stop 14B2)
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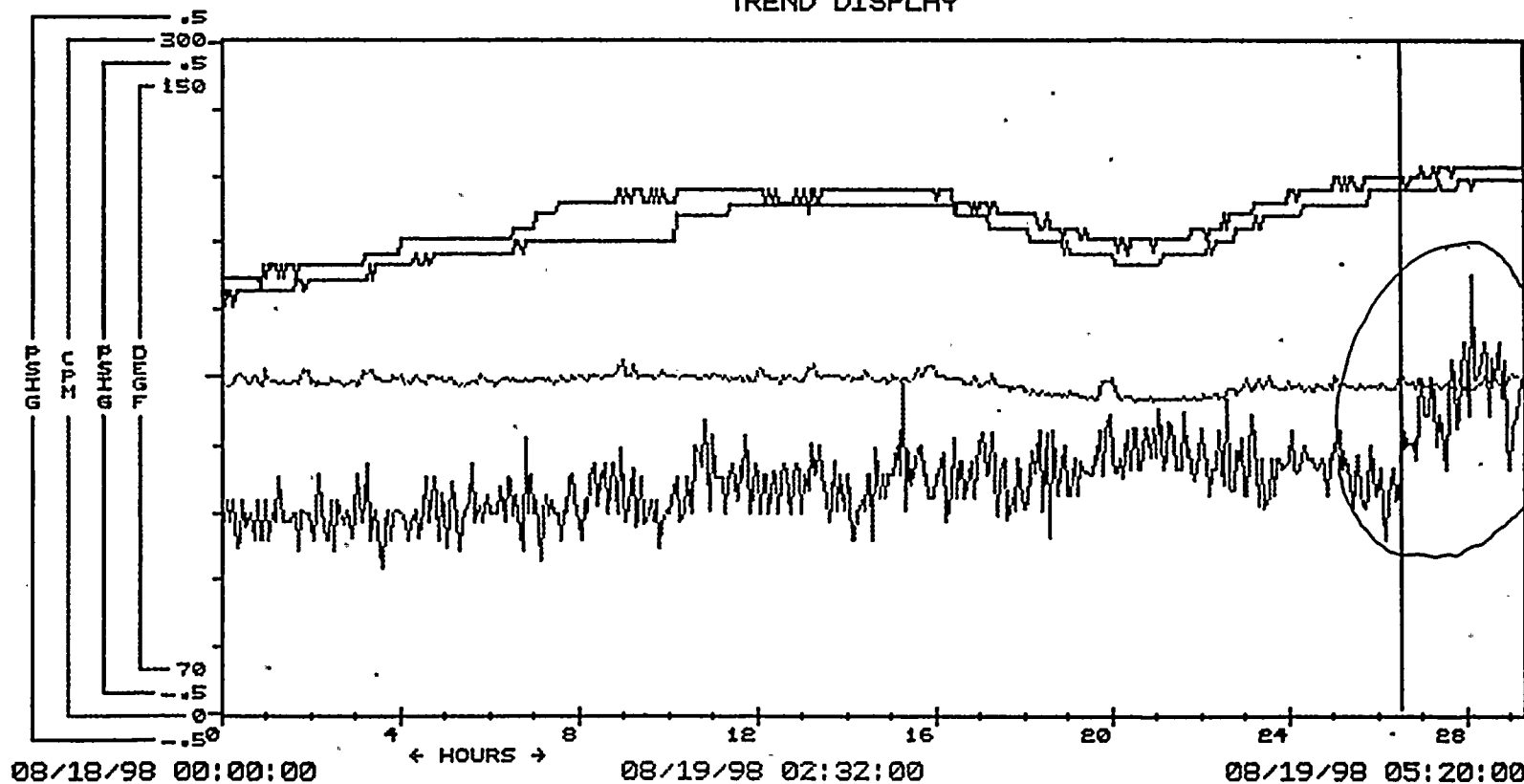
U.S. NRC Ginna Senior Resident Inspector

DEPRESS FUNCTION KEY

ARP

AUG 19, 1998
05:45:48

TREND DISPLAY



POINT ID	DESCRIPTION	TREND LINE	QUAL	LOW ALARM	HIGH ALARM
R11	CONTAINMENT AIR PARTICULATE	1.26524+02	GOOD	.00000+00	2.60000+04
P0947	CONTAINMENT PRESSURE	.28	GOOD	.00	4.00
P0945	CONTAINMENT PRESSURE	.30	GOOD	.00	4.00
TCU07	CV INTERMEDIATE LVL 6FT TEMP #7	109.7	GOOD	.0	.0

F1=CENTER
PREV CANC

F2=LEFT

F3=RIGHT

F4=TEMPLATE
CONSOLE=NORMAL

F5=FAST LEFT
MODE=ON LINE

F6=FAST RIGHT
CPUR

