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SUBJECT: Responds to NRC request for addl info re 920318 & 0625 applications for amend to License NPF-21,changing TS 4.6.6.1.b.3 re primary containment atmosphere control. Schematic of catalyst bed RTD locations encl.

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July 28, 1992
G02-92-178

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: WNP-2, OPERATING LICENSE NPF-21
REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION 4.6.6.1.b.3, PRIMARY CONTAINMENT ATMOSPHERE CONTROL (ADDITIONAL INFORMATION)

References: 1) Letter G02-92-064, dated March 18, 1992, GC Sorensen (SS) to NRC, same subject
2) Letter G02-92-154, dated June 25, 1992, GC Sorensen (SS) to NRC, same subject

This letter is being sent in response to a request for additional information in support of the proposed Technical Specification change request transmitted to the NRC in References 1 and 2. As discussed in the referenced letters, two methods may be used to monitor the effectiveness of the catalyst beds in the Containment Atmosphere Control (CAC) system. One test will determine the operability of the catalyst by comparing the hydrogen content in the influent and effluent process streams. The second test examines the temperature profile through the bed, indicating the relative location of the catalytic reaction. A successful test will show that the recombination process is occurring near the top of the bed. In the event that the hydrogen content in the effluent stream is too high or that the peak reaction temperature is occurring lower within the catalyst bed, the operability of the system must be evaluated.

The capacity of the catalyst bed can be reduced through mechanical, thermal, or chemical (poisoning) deactivation. The proposed surveillance tests will provide indication of such damage to the catalyst. The potential for and the results of damage to the catalyst bed was the topic of a recent telephone conversation on July 8, 1992, between MG Eades and WD Bainard of the Supply System and RR Assa, KK Bristow, and AJ D'Angelo of the NRC. The reviewers were concerned about the possibility of poisoning and the subsequent effects in the catalyst bed. Mr. Bainard explained that poison can be introduced through the environment or the process. The CAC skid is normally maintained with a pressurized nitrogen blanket. It communicates, when unisolated, with the containment inert atmosphere. The process stream, in a design bases event, may include iodine. Iodine can chemically poison the platinum catalyst; however, the CAC skid scrubs the process gas to remove iodine from the process stream and heats it to reduce effects on the catalyst.

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[illegible]

Also clarification was required regarding the location of the RTDs in the bed. To help understand the physical arrangement, Attachment 1 includes two sketches of the bed. Additionally, Attachment 2 contains two graphs of bed temperature data taken during previous surveillance tests. This information shows that consistently, the peak reaction temperature has been indicated at the forth RTD, located about 30% into the bed. It also shows a substantial temperature rise in the second RTD, even though that device is located above the catalyst. This temperature increase is due to radiant heat from the reaction occurring immediately as the process stream enters the catalyst. If subsequent surveillances indicate that the peak temperature is occurring lower in the bed, the CAC skid must be evaluated in order to assure operability.

In summary, the catalyst is protected from environmental damage by the pressurized nitrogen blanket. The operation of the scrubbing and heating in the skid minimizes the effects of iodine poisoning. The evaluation of the influent and effluent streams provides positive evidence that the catalyst is fully functional. The evaluation of the peak temperature within the catalyst bed verifies that the location of the reaction is consistent and that the bed is still functioning in accordance with the original parameters.

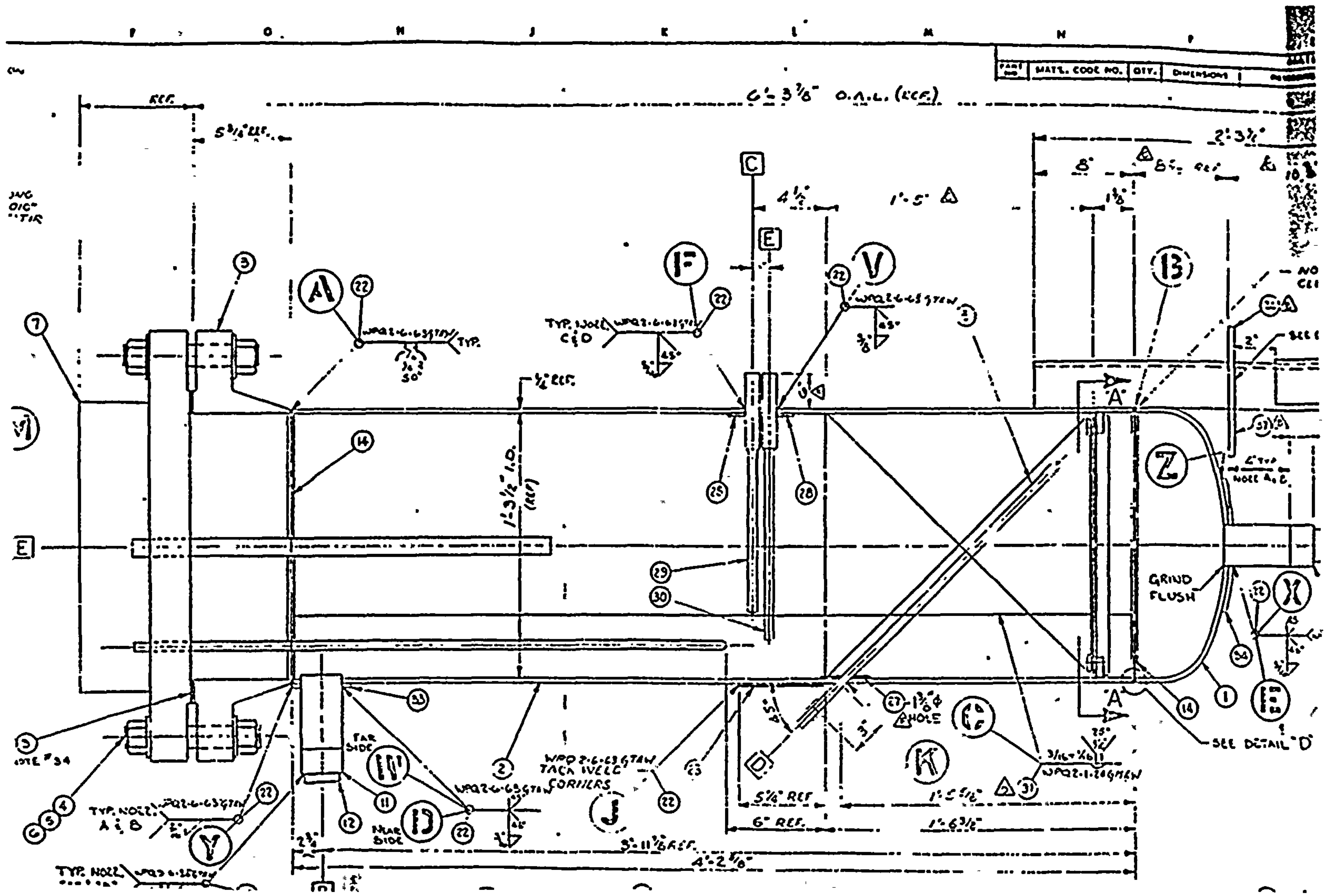
Sincerely,

G. C. Sorensen, Manager
Regulatory Programs (Mail Drop 280)

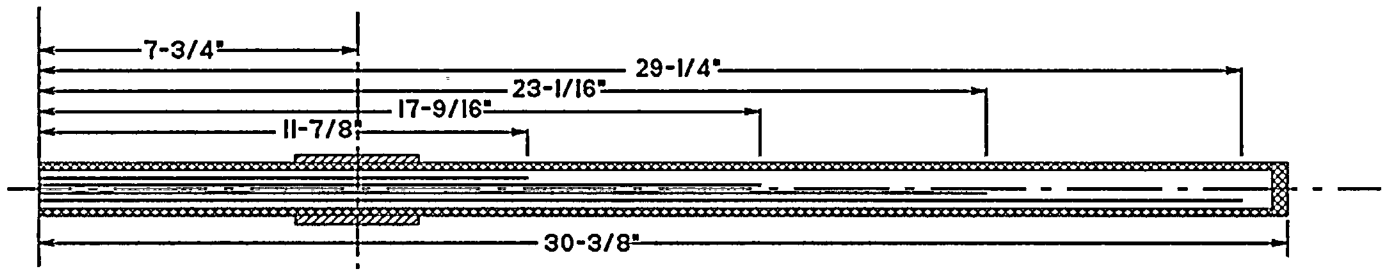
MGE/bk
Attachments

cc: JB Martin - NRC RV
NS Reynolds - Winston & Strawn
RR Assa - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

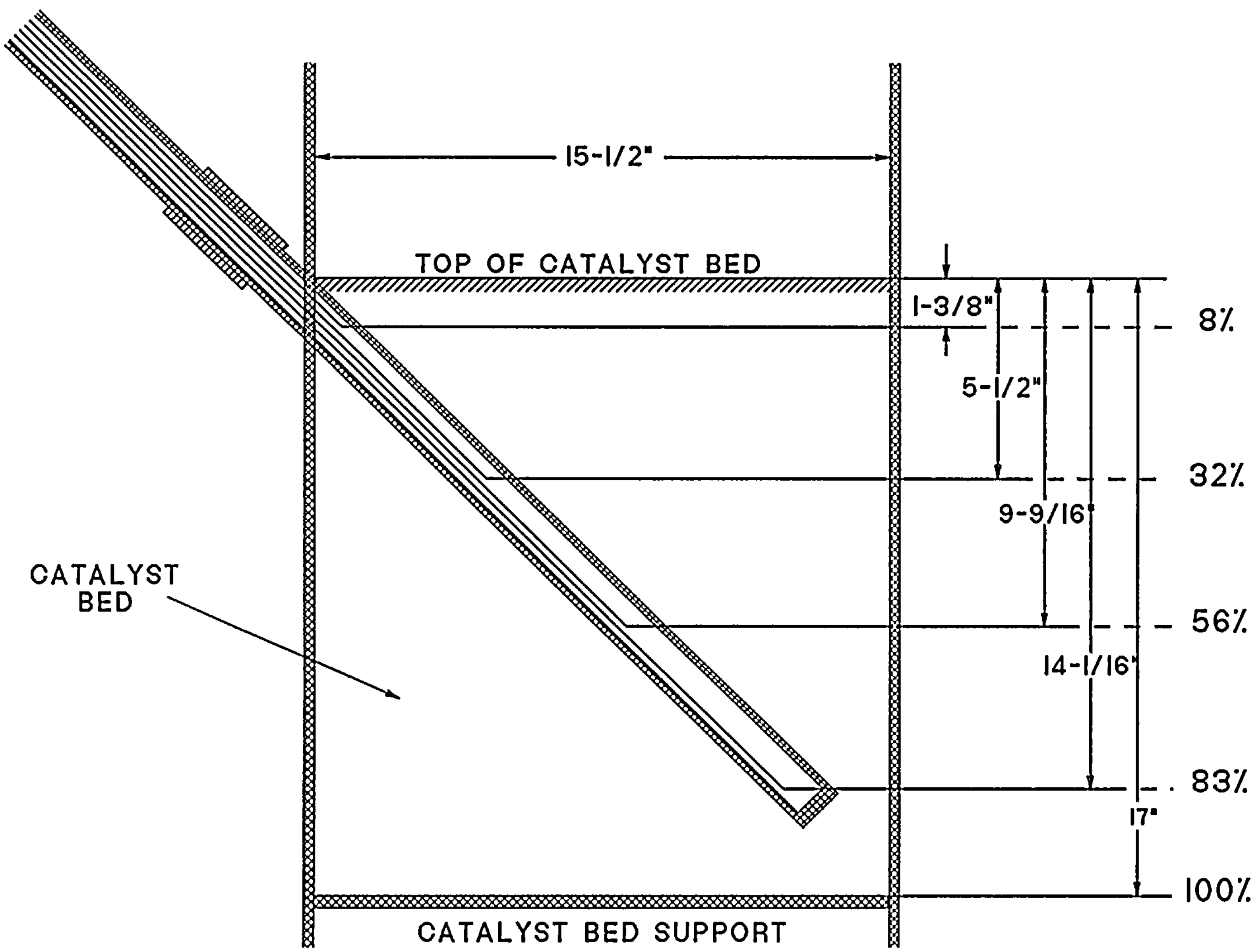
ATTACHMENT 1



WNP-2 CAC CATALYST BED RTD LOCATIONS

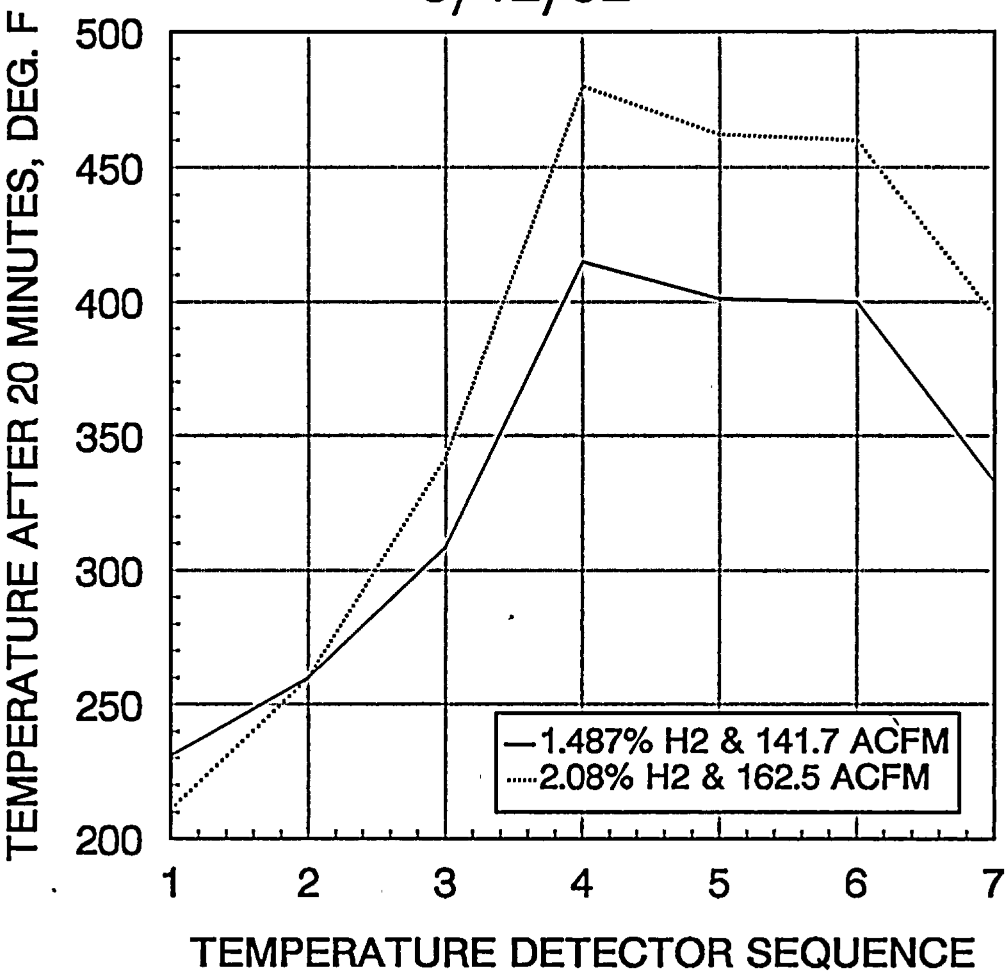


Thermowell is constructed of 1" Sch. 80 316 S/S pipe



WCB 7/23/92

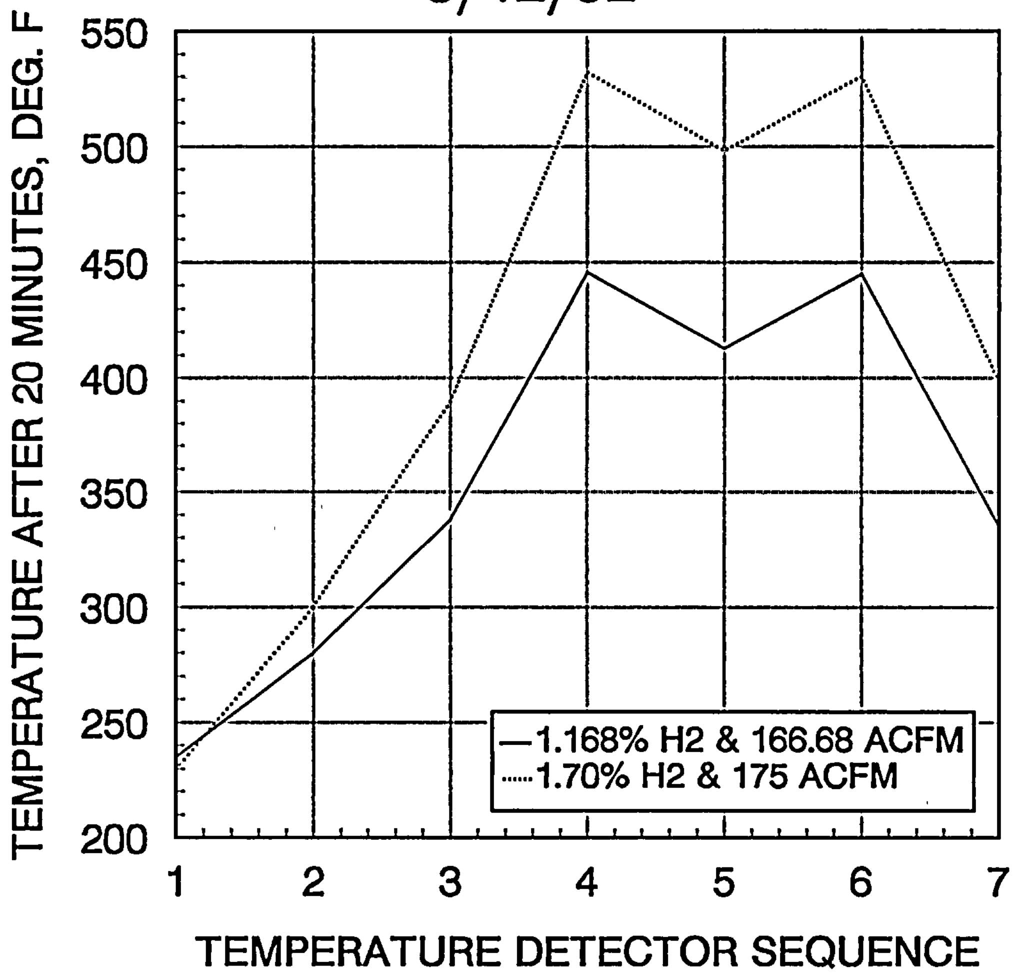
WNP-2 CAC RECOMBINER TESTS
CAC-HR-1A
3/12/92



WDB 7/23/92

1 -- Located at blower outlet upstream of recombiner
2 -- Located below heating rods and above catalyst bed
3, 4, 5, 6 -- Located in the thermowell in the bed
7 -- Located in the outlet pipe approx. 4 feet downstream

WNP-2 CAC RECOMBINER TESTS
CAC-HR-1B
3/12/92



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