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INTERNAL CORRESPONDENCE

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To (Name) Mr. A. P. Huber ✓ Date February 10, 1960
 Company UCNC, ORGDP
 Location K-1001

Originating Dept.
 Answering letter date

Copy to Mr. R. M. Batch Subject Process Gas Release Detection
 Mr. W. H. Hildebrand System, K-902-4, Follow-Up
 Mr. K. M. Jones Report, M-21520.
 Mr. R. L. Newton
 Mr. R. D. Shaffer
 File

K25RC

NOT TO BE RELEASED FROM
PLANT RECORDS K-1034

PLANT RECORDS DEPT.
 CENTRAL FILES
 REC-25993

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Introduction

In order to realize the maximum production from the 2,000 hp. stages in K-33, it is necessary to operate at compressor discharge pressures exceeding atmosphere. The possibility of a process gas release to atmosphere is inherent to operation at such pressure levels. Therefore, an immediate indication of a process gas release is required in order that prompt action may be taken to minimize the amount of any outleakage.

Authorization was granted^{1/} for the location of two air radiation monitors, one at Cell 4 and the other at Cell 8 on the operating floor of Unit K-902-4. Each monitor serves two and one-half cells and the adjacent cell bypass housing. Sample probes are situated: (1) inside the cell enclosures above each buffered expansion joint, (2) in each 'B' end seal tunnel, and (3) in the bypass housing between the cells. The probes are connected to headers which conduct the gas samples to the monitor for analysis. Samples are taken automatically in sequence from each probe in a preset time interval. In the event the monitor detects evidence of outleakage, an alarm is actuated in the Area Control Room initiating appropriate remedial action by the area personnel.

^{1/} Letter, M. F. Schwenn to A. P. Huber, "Process Gas Release Detection System in K-902-4, Even Cells," January 17, 1957.

RESTRICTED DATA

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This document has been approved for release to the public by:
 A.S. Gust 6 MAR 63 Date
 Technical Information Officer
 Oak Ridge X-25 Site

Union Carbide Nuclear Company, Oak Ridge Gaseous Diffusion Plant, Operating Contractor for the U.S. Atomic Energy Commission.

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Classification changed to: UNCLASSIFIED

(level and category)

By authority of: CG PGD-4

(classification guide)

ADC or ADD signature (first reviewer) JSM [Signature] Date 9/21/94

ADD signature (final reviewer) [Signature] Date 9/27/94

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Mr. A. P. Huber

February 10, 1960

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Scope

1. Sample lines of 3/4" diameter copper tubing were connected from each probe to the air monitors.
2. Two air monitors were provided.
3. The necessary alarms were provided in the Area Control Room.

Method

All of the work was integrated with operations in such a manner that the high efficiency of production was maintained.

Economic Evaluation

A comparison of the estimated and actual costs is as follows:

	<u>Estimated</u>	<u>Actual</u>	<u>Difference</u>
Labor	\$ 7,350	\$ 5,686	- \$1,664
Material	13,825	13,840	15
Engineering	2,400	2,342	- 58
Plant Expense	<u>4,875</u>	<u>3,996</u>	<u>- 879</u>
Total	\$28,450	\$25,864	- \$2,586

Additional funds in the amount of \$10,450 were authorized^{2/} when it became known that the air monitors would cost about 30% more than estimated. In addition, increased cost was anticipated for the field testing required prior to final design. The labor cost for this work was less than estimated causing a proportional decrease in the cost for plant expense

There have been no significant process gas releases since this detection system was placed in operation. However, tests indicate the system affords the protection for which it was designed.

Funds to do this work were provided from the 1902 Equipment Account for FY-1957.



 H. G. P. Snyder

HGPS:AHS:jk

^{2/} Letter, H. G. P. Snyder to A. P. Huber, "Additional Funds for Process Gas Release Detection System in K-902-4" May 14, 1957.