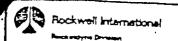
Rockwell International Accurations Division	UNUSUAL OCCURENCE REPORT	1. DOR NO. Internal #1
3. DIVISION OR PROJECT:		TOTAL PAGES 3
Atomics International	Development and Test	PAGE 1 OF 3
4. FACILITY, SYSTEM, OR EQUIPME	NT:	2. STATUS AND DATE:
		D INITIAL
NAME: OGO CO 1 C TAIR OCO 1	TOO9 FUNCTION Temporary Storage	INTERIM
DWG NO. OR SPEC NO.NAA 9593-	973218 COMPONENT ID NO.	. X FINAL 6-10-86
TYPE	CODES & STDS BUILT TO 1956	5 DATE OF OCCURRENCE: 5-29-86
VENDOR _ C. E. Howard	VENDOR SERIAL NO. 6344	8 TIME OF OCCURRENCE:
DIRER REFERENCE DOCUMENTS	10010P19003 Sodium Russ Ess. OD	ì
7. SUBJECT OF OCCURRENCE (TITLE	E):	0945
Sodium Hydroxide Spill	at T009	•
	•	
8. APPARENT CAUSE		
DESIGN   MATERIAL   T	TEST PROCEDURE CHECKOUT CON	CTELLES
MANUFACTURE D INSTALLATIO	· · · · · · · · · · · · · · · · ·	·
	- OTHER L	EXPLAIN IN BLOCK 11)
9. DESCRIPTION OF OCCUR	RENCE:	
charged from a 350 cu ft Building T009. It appead one or two of the pipe p of the yard, an adjoining building. Some sodium hy surrounding yard area.	c 0930 in a normal state. At 1000 it was a solid and a solid by the solid and the solid and the solid and that 10's of gallons of caustic solid and that 10's of gallons of the tank, conservations at the top of the tank, conservations at the solid and some scrap being ydroxide solution puddled up under the	ion voluntarily dis- on the west side of lution sprayed out of ating the tank, part
10. OPERATING CONDITIONS	S OF FACILITY AT TIME OF OCCURRENCE:	
The tank was in its norm	al storage position where it has been lace within the building. No operation	for 11 years. Routine as were being per-
11. IMMEDIATE EVALUATION		
The tank was known to have	ve contained a small amount of sodium a was moved to the Bldg. 9 yard in 1976. ion of SRE. It was a secondary sodium	and/or sodium reaction The tank originated

The tank was known to have contained a small amount of sodium and/or sodium reaction products at the time it was moved to the Bldg. 9 yard in 1976. The tank originated at a non-radioactive portion of SRE. It was a secondary sodium tank and had been drained of sodium except for a small amount left in the cold trap in the bottom of the tank. The tank openings were sealed at the time of removal at the SRE. It is assumed the method of sealing was tuck tape and plastic. The most likely scenerio of what happened seems to be, sometime recently (ballpark estimate of months), the seals had deteriorated to the extent that the tanks breathed, allowing significant amounts of moist air to enter the tank. This moist air could result in a layer of liquid sodium hydroxide on top of the sodium hydroxide encrusted sodium heel. A hydrogen bubble or other minor disruption could then allow intimate contact between hydrogen explosion then ejected the liquid sodium, releasing hydrogen. A subsequent hydrogen explosion then ejected the liquid sodium hydroxide and dry reaction products from the various ports of the tank. A similar explosion during a sodium moist air cleaning test was documented in Tech Data Record NAA-SR-12403 "Sodium Air Reaction Test at Ambient Conditions," by F. W. Poucher, dtd. 4-3-67.



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## 12. IMMEDIATE ACTION TAKEN AND RESULTS:

Management, Health & Safety, the Emergency Spill Team, Security and Environmental were notified. The area was roped off and a plan was formed to stabilize the spill. Citric acid powder was sprinkled over the area to help neutralize the solution. A drainage ditch adjoining the spill area was dammed to contain the spill. Water was flushed over the spill area to wash it into the drainage ditch where -1000 gallons of neutral solution were sucked up into the tank on a disposal transport truck by Disposal Control Service. The tank was plumbed and purged with CO<sub>2</sub> gas. Photopincident.

graphs were taken of the tank and surroundincident.	umbed and purged within one	th CO <sub>2</sub> gas. Photo- hour of the observed				
INITIAL DISPOSITION						
MODIFIED . SUR.	JECT TO FURTHER TEST	e e				
USED AS IS ADJUSTED	REPAIRED	REMOVED				
ELIMINATED X SENT TO MAINT	SENT TO MFG	OTHER				
13. IS FURTHER EVALUATION REQUIRED?	Y	ES NO 173	_			
IF "YES," BEFORE FURTHER OPERATION?	YES 🗖 NO 🗖					
IF "YES," BY WHOM?	WHE)	N? <u>6/14/86</u>				
14. FINAL EVALUATION AND LESSONS LEARNED:			_			
The major lesson from this incident is that unused tanks, even with small amounts of sodium residues, can represent a hazard if proper sealing of the tank is not maintained, since over long periods of time, sealing methods may deteriorate and active surveillance and maintenance programs of stored vessels with Na residues is						
	RECOMMENDED	☐ TO BE SUPPLIED	_			
The tank was vented and a vent pipe was plumbed from the tank to a containment vessel to prevent further spills. The tank was moved to Building 133 (the Sodium Burn Bacility) for treatment of any remaining material, cleaning, and disposal. The tank						
eals on other unused uncleaned Na tanks and cold traps were checked and long term torage of such items will be minimized whereever possible.						

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16.		OGR	AMMA	TIC.	MERA	CT:

no direc	t program	mmatic	impact	About	12	house	machania			_		
Disposal	Control	Service	96 to 6	1000	A.L.		mechanics	time	and	the	support	of
•		501710	-3 LU C	rean ub	the	neuti	mecnanics [ralized so	lution				

17. IMPACT CODES AND STANDARDS: .

18. SIMILAR UNUSUAL	OCCURRENCE	REPORT MUMBERS.
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19. SIGNATURES:

FORM 707-8-2 REV 4-86

ORIGINATOR MANAGER

DATE 6/18/81

DATE 6/18/81

DATE 6/18/81

DATE 5/18/81

DATE 5/18/81

DATE