

CLASSIFICATION CANCELLED
WITH DELETIONS
BY AUTHORITY OF DOE/OC

Carl Walske 4/14/88
REVIEWED BY *J. Diaz* DATE *5/10/88*

106877

~~SECRET~~
~~CONFIDENTIAL~~
~~RESTRICTED DATA~~

PRIORITY

J WF

HWA037WLA038

PITTSZYUW RUWTHWL5085

ZNY SSSSS

P 010030Z MAR 68

FM UCLRL JAMES L OLSEN L-1 LIVERMORE CALIF

TO USAEC DMA CHARLES WINTER, DPY DIR WASH DC /SERIES C/

AEC

BT

~~SECRET~~ MSG NR S-110. CITE: BYX 68-17.

DELIVER OPENING BUSINESS DAY MARCH 1, 1968.

REFERENCE OUR TELEPHONE CONVERSATION THIS DATE. ON 19 FEB 68 WE RECEIVED A TT MESSAGE FROM SAC DISASTER CONTROL TEAM, THULE AFB, GREENLAND REQUESTING OUR EVALUATION OF THE PLANNED PACKAGING OPERATION OF THE CONTAMINATED ICE AND SNOW. A REPLY WAS SENT 21 FEB 68. LATER, CARL WALSKE REQUESTED AN UNCLASSIFIED VERSION OF OUR REPLY. HE PLANNED TO USE THIS TO ANSWER A DANISH QUERY. THE INFORMATION CONTAINED IN THE TWO TT MESSAGES IS AS FOLLOWS: SRD TT MESSAGE SENT 21 FEB 68 TO SAC DISASTER CONTROL TEAM, THULE, GRN.

*REFERENCE TWX DATED 19 FEBRUARY 68 REQUESTING EVALUATION AND COMMENTS ON PACKAGING ACTION.

DELETED

US DOE ARCHIVES
826 U.S. ATOMIC ENERGY COMMISSION
RG _____
Collection <u>Dos. McCraw</u>
Box <u>17 Job 1320</u>
Folder <u>MHS 3-9 (1968) February, Thule Incident</u>
0610030-SSSS--RUWTAUA

1968 FEB 29 PM 9 01

U.S. ATOMIC ENERGY COMM.
TWX UNIT

~~RESTRICTED DATA~~

~~Information is as defined in the Atomic Energy Act of 1954. Release of its contents to any unauthorized person is prohibited.~~

~~GROUP 1
Excluded from automatic
downgrading and
declassification~~

DELETED VERSION ONLY

DELETED

~~SECRET~~

HANDLE AS CONFIDENTIAL CORRESPONDENCE

DELETED

ASSUMING

ALL THIS MATERIAL IS PU (WORST CASE) AND UNIFORMLY DISPERSED IN ONE 25,000 GAL TANK (AGAIN WORST CASE), THEN MAXIMUM CONCENTRATION IS 0.00046 KILOGRAMS PER LITER. (ASSUMES THAT TANK CONTAINS TWO THIRDS VOID WHEN FILLED WITH DEBRIS.) THIS IS SUBSTANTIALLY BELOW LIMITING CONCENTRATION OF 0.0078 KILOGRAMS PER LITER FOR CRITICALITY AND THEREFORE SAFE.

"WHEN THE FROZEN MATERIAL MELTS, THE PU AND OY WILL SETTLE TO THE BOTTOM OF THE VESSEL AS PARTICLES OR AS A FLOCCULENT PRECIPITATE. THERE IS NO REASONABLE MECHANISM THAT COULD CONCENTRATE THIS MATERIAL INTO A CRITICAL CONFIGURATION.

DELETED

"NEVERTHELESS, WE SUGGEST THAT DUAL MONITORS BE USED TO CHECK [REDACTED]

DOE ARCHIVES

~~SECRET~~

PAGE 3 RUWTHWL5085 ~~SECRET~~

DEBRIS LOADED INTO 25,000 GAL TANKS TO ~~SECRET~~ DELETED PER
RECOMMENDATION OF M. KNEZEVICH. PER ABOVE, NO NEUTRONIC POISONS
(SUCH AS BORAX) NEED BE ADDED TO DEBRIS FOR SAFE STORAGE AND
TRANSPORTATION IN 25,000 GAL TANKS.

"IT APPEARS THERE WOULD BE NO PROBLEM FROM PRESSURE BUILD-UP
CAUSED BY RADIOLYSIS. HOWEVER, THERE MAY BE HYDROGEN BUILD-UP FROM THE
REACTION OF ALUMINUM AND MAGNESIUM WITH THE SOLUTION. IT IS
RECOMMENDED THAT A PRESSURE GAUGE AND RELIEF VALVE BE INSTALLED AND
GAUGE CHECKED FREQUENTLY, ESPECIALLY AS THE SOLUTION WARMS UP. NO
OTHER CHEMICAL EFFECTS ARE EXPECTED.

"ADDITIONAL INFORMATION CONCERNING THE TANKS, VENT VALVES AND
GAUGES WILL FOLLOW."

UNCLASSIFIED, ODO TT MESSAGE SENT 29 FEB 68 TO CARL WALSKE.

"REF OUR TELEPHONE CONVERSATION THIS DATE AND TELETYPE MESSAGE
FROM SAC DCT, THULE, GRN REQUESTING EVALUATION AND COMMENTS ON
PACKAGING CONTAMINATED SNOW AND ICE FROM THE BURNED AREA IN LARGE
25,000 GAL STEEL TANKS.

OF THE TOTAL U-235 AND PU PRESENT, SOME HAS BEEN RECOVERED ON
THE AIRPLANE PARTS. IF WE ASSUME THAT ALL OF THE REMAINING FISSILE

~~SECRET~~

DOE ARCHIVES

MATERIAL IS PU (WORST CASE), THEN MAXIMUM CONCENTRATION IS SUBSTANTIALLY BELOW LIMITING CONCENTRATION OF 0.0078 KG PER LITER FOR CRITICALITY AND THEREFORE SAFE.

WHEN THE FROZEN MATERIAL MELTS, THE PU AND U-235 WILL SETTLE TO THE BOTTOM OF THE VESSEL AS PARTICLES OR AS A FLOCCULENT PRECIPITATE. THERE IS NO REASONABLE MECHANISM THAT COULD CONCENTRATE THIS MATERIAL INTO A CRITICAL CONFIGURATION.

NO NEUTRONIC POISONS (SUCH AS BORAX) NEED BE ADDED TO DEBRIS FOR SAFE STORAGE AND TRANSPORTATION IN 25,000 GAL TANKS.

IT APPEARS THERE WOULD BE NO PROBLEM FROM PRESSURE BUILD-UP CAUSED BY RADIOLYSIS. HOWEVER, THERE MAY BE HYDROGEN BUILD-UP FROM THE REACTION OF ALUMINUM AND MAGNESIUM WITH THE SOLUTION. IT IS RECOMMENDED THAT A PRESSURE GAUGE AND RELIEF VALVE BE INSTALLED AND THE GAUGE CHECKED FREQUENTLY, ESPECIALLY AS THE SOLUTION WARMS UP. NO OTHER CHEMICAL EFFECTS ARE EXPECTED."

GP-1

BT

DOE ARCHIVES

NNNN

~~SECRET~~

4