Release

From: Richard Skokowski / RIII
To: Steven Orth
Date: Wed, Nov 30, 2005 3:58 PM
Subject: Fwd: CRs re: trtium leak frm vac brkrs

D-68

From: "NXS@NRC.GOV" <nxs@nrc.gov>
To: "RAS@NRC.GOV" <ras@nrc.gov>
Date: Wed, Nov 30, 2005 3:08 PM
Subject: CRs re: trtium leak frm vac brkrs

AS REQUIRED, PRINT ISSUE REPORT AND PROVIDE TO YOUR SUPERVISOR
Note: This is your only notice. You will not have an opportunity to print this confirmation later.

Exelon Nuclear Issue - Statement of Confirmation

Issue #: 00428868 Originator: ALLAN R HAEGER Submit Date: November 30, 2005

Basic Information

CR for current H_3 activity found adjacent to Smiley Road.

Affected Facility:	Braidwood
Dscv Date:	11/30/2005 11:50
How Discovered Code:	H02
Event Date:	11/30/2005 11:50
Affected Unit:	00
Affected Sys:	--
Subject:	ELEVATED TRITIUM LEVELS IN ON-SITE MONITORING WELLS

Required Information

Condition Description:	Elevated levels of tritium have recently been identified in certain on-site groundwater sampling wells. The exact source has not been located nor has the source been determined to be active or historical.
Immediate actions taken:	An issue management team has been formed to address this issue. The team will address characterization of the extent of the elevated tritium levels, including the potential for elevated levels off-site; identification and elimination of the source if still active; remediation of the affected areas; communications with government agencies and any potentially affected members of the public; and regulatory interface.
Recommendation for action:	The issues management team will address the immediate actions required for this issue. A root cause should be initiated to document the immediate actions, as well as to capture the cause, additional extent of condition investigations, and corrective actions to prevent recurrence. Also, the station's documentation of previous leaks in accordance with 10 CFR 50.75(g) needs to be reviewed.
Supervisor Verbally Contacted	John Moser

Optional Additional Information

What activities, processes, or procedures were involved?	The elevated levels were discovered in monitoring wells that were recently installed to provide enhanced ground water monitoring capability.
Why did the condition happen?	Unknown. It is believed the source may be from historical vacuum breaker leaks, but this needs to be confirmed.
What are the consequences?	Undesired elevated tritium levels on site property. Potential for these elevated levels to have migrated off-site.
Any procedural requirements impacted?	None.
Identify any adverse physical conditions:	As described above.
List of Knowledgeable Individuals:	John Moser Jim Gosnell Dale Ambler
Is this a repeat or similar condition?	The discovery is part of an expanded sampling program as discussed above.

CR for 1998 Leakage from Vacuum Breaker-1.
No ACE or RCR done for this issue.

PIF # : A1998-04324

ORIGINATOR

Title : CW Blowdown Vacuum Breaker Leak

Event Date : 12/04/1998 Event Time : 11:00 AM

Discovery Date : 12/04/1998 Discovery Time : 11:00 AM

Unit : 00 Unit Mode : 1 % Power : 100 System : CW

EPN : 0CW060 Location : OFFSITE

OCCURED/DISCOVERED WHILE PERFORMING :

AR # : 980127750 WR # : WR TASK # :

SURV # : RWP # : QR/RIN # :

OOS # : PCE # : OTHER #

OTHER DESCRIPTION

PROBLEM DESCRIPTION

POND OF WATER FOUND ON PROPERTY, WITH STANDING WATER IN ROAD DITCH ALONG SMILEY RD.

KNOWLEDGEABLE PERSONS : joe tidmore

IMMEDIATE ACTION TAKEN

AR WRITTEN MONDAY AFTER SOUTHERN DIV. PR CONTACTED BY NEIGHBOR. SE SIGHTED LEAKING VACUUM BREAKER FROM THE SOUTH WAS UNAWARE OF THE "POND" TO THE NORTH. CHEMISTRY CONTACTED ENVIORMENTAL SERVICES. AR STATUS CHANGED TO B1 DUE TO POSSIBLE RELEASE PERMIT VOLATION.

AR # : 980127750 WR # : WR TASK# :

TIP/TRN # : PROCEDURE # ER # :

HOLD TAG # : REJECT TAG # :

ORIGINATOR : Johnson, david m. EXT : 2476 DEPT : SE ORIGINATED DATE: 12/05/98

SUPERVISOR

HOW IT HAPPENED

0CW060 VACUUM BREAKER FAILED CAUSING VALVE PIT TO FILL UP AND OVERFLOW TO THE GROUND.

WHY IT HAPPENED

UNKNOWN

A RCR WAS DONE FOR THIS ISSUE.

PIF # : A2000-04281

ORIGINATOR

Title : Failed Circ Water Blowdown Vacuum Breaker Caused Unplanned Flooding Outside of the Power Block

Event Date : 11/06/2000 Event Time : 02:30 PM

Discovery Date : 11/06/2000 Discovery Time : 03:00 PM

Unit : 00 Unit Mode : 1 % Power : System : CW

EPN : 0CW135,0CW136 Location : OTHER

OCCURED/DISCOVERED WHILE PERFORMING :

AR # : WR # : WR TASK # :

SURV # : RWP # QRI/RIN # :

OOS # : PCE # : OTHER # Followup Inspection

OTHER DESCRIPTION

Circ Water blowdown corridor-east of plant

PROBLEM DESCRIPTION

I RECEIVED A CALL FROM THE ILLINOIS ENVIRONMENATAL PROTECTION AGENCY (BILL PAPADAKIS) ABOUT A REPORT OF WATER STANDING IN THE DITCH AT SMILEY ROAD. HE SAID THIS HAS BEEN THERE FOR A WHILE AND WE HAVEN'T HAD ANY RAIN UNTIL TODAY. HE ASKED IF I HAD ANY IDEA WHERE IT MIGHT BE COMING FROM. I SAID I DIDN'T KNOW BUT WOULD LOOK INTO IT AND GET BACK TO HIM. I NOTIFIED CAL WALRATH (2202) OF THE CALL AND SAID I WAS GOING OUT TO LOOK, AND THAT I SUSPECTED IT MAY BE A VACUUM BREAKER PROBLEM ON THE BLOWDOWN LINE. WHEN I APPROACHED THE VACUUM BREAKER (CONTAINING VALVES 0CW135 &0CW136), I NOTICED WATER POURING OUT FROM THE MANHOLE COVER. THE ENTIRE AREA WAS SATURATED. UPON ARRIVAL BACK AT THE PLANT, I UPDATED THE OCC WITH THE RESULTS. ARRANGEMENT BEGAN TO PUT TOGETHER THE APPROPRIATE WORK PACKAGES AND OPERATING BEGAN LOOKING INTO ISOLATION OF THE BLOWDOWN FLOW.

KNOWLEDGEABLE PERSONS : Louis Rhoden, Carl Dunn, Mark Trusheim, Bill Vandermyde

IMMEDIATE ACTION TAKEN

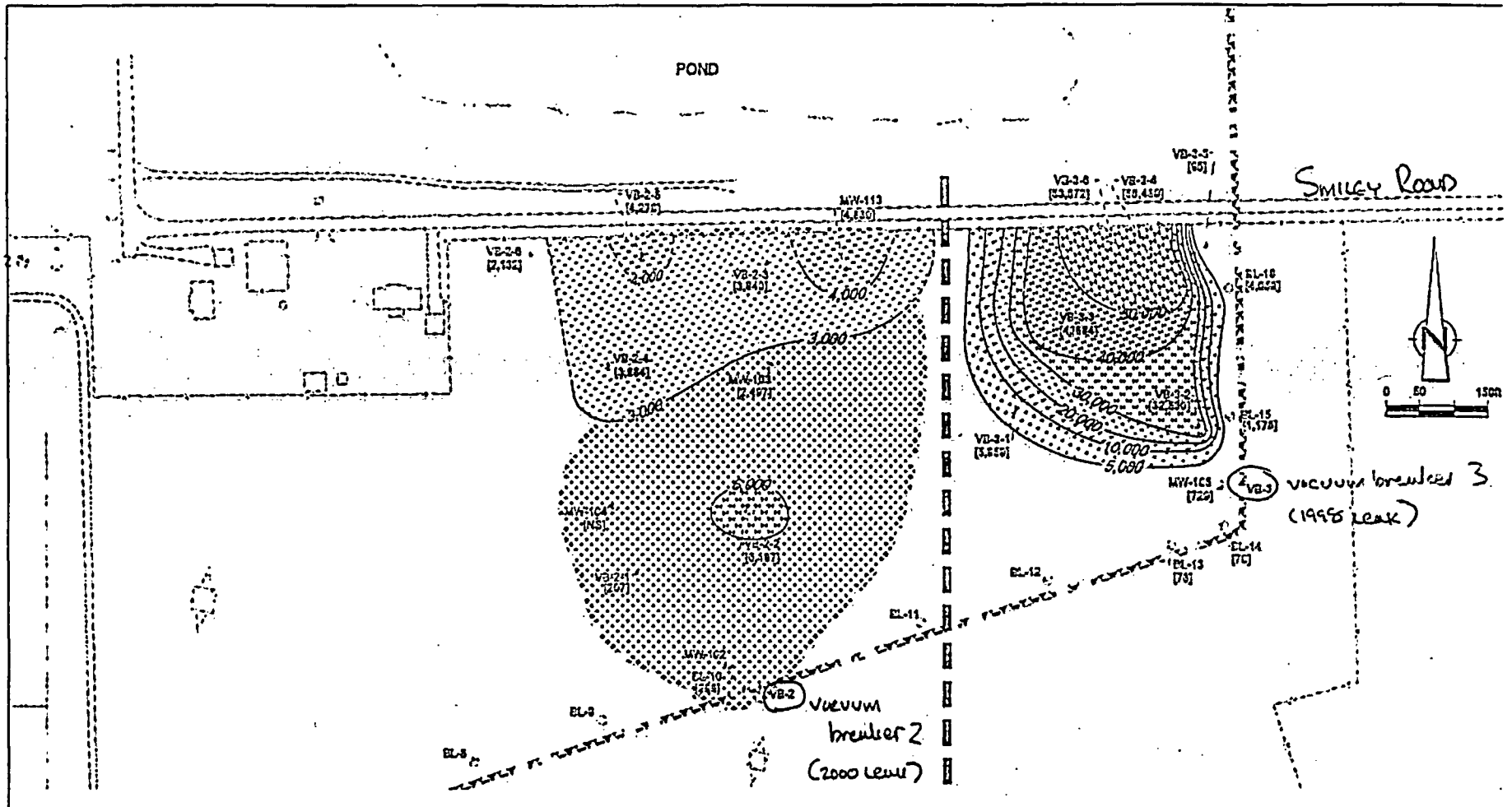
I NOTIFIED BILL POPADAKIS (IEPA) OF WHAT I HAD FOUND. I EXPLAINED THE SOURCE OF THE WATER AND A DESCRIPTION OF THE AREA. HE STATED THAT HE WOULD NOT NEED ANY WRITTEN FOLLOW UP AT THIS TIME AND SINCE THE WATER WAS CONTAINED IN THE DITCH, WE DID NOT NEED TO SAMPLE. THERE WERE NO NPDES PROBLEMS. I TOLD HIM I WOULD UPDATE HIM WEDNESDAY MORNING. OPERATING FOLLOWED UP BY SHUTTING DOWN BLOWDOWN FLOW.

AR # : WR # : WR TASK# :

TIF/TRR # : PROCEDURE # ER # :

HOLD TAG # : REJECT TAG # :

ORIGINATOR : Joseph Tidmore EXT : 2299 DEPT : CH ORIGINATED DATE: 11/07/00



figure

TRITIUM CONTOURS
NOVEMBER 2005
BRAIDWOOD STATION
Braceville, Illinois

18541-09(SOURCE)GN-CO021 NOV 28/2005

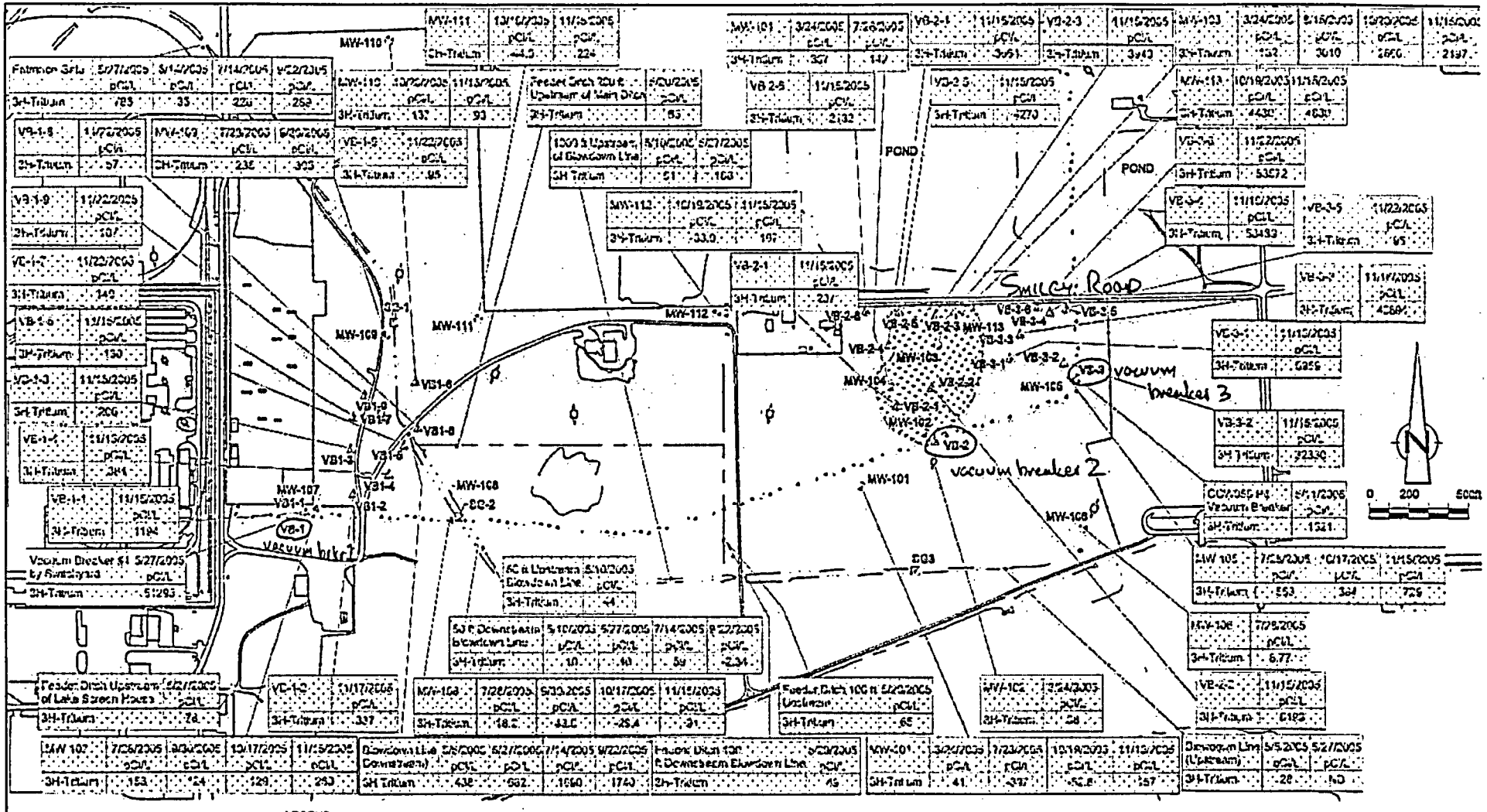
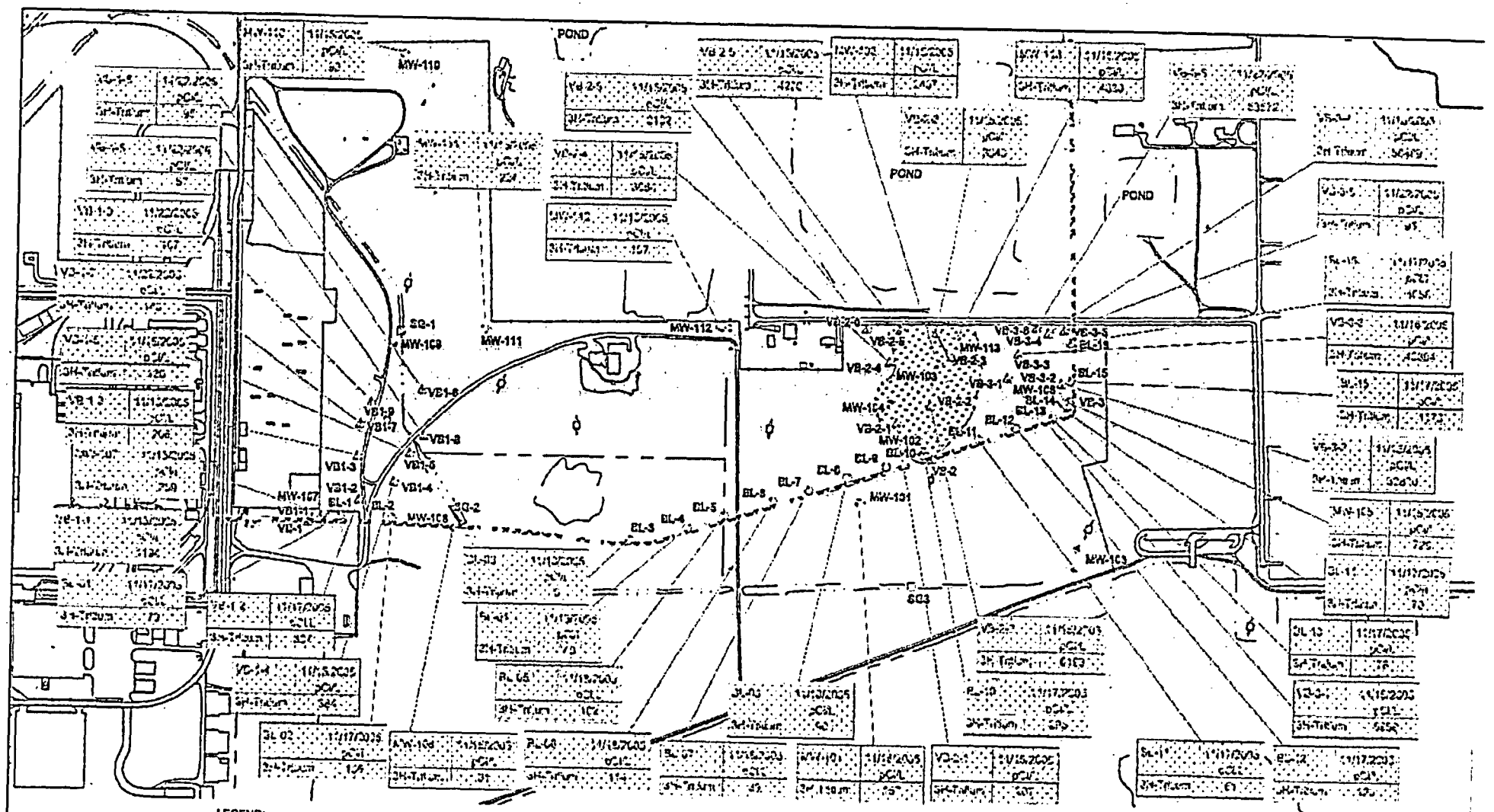


figure 2

TRITIUM IN GROUNDWATER AND SURFACE WATER
BRAIDWOOD STATION
Braceville, Illinois

16841-C6(SOURCE)GN-CO022 NOV 28/2005



16841-09(SOURCE)GN-CO023 NOV 28/2005

figure 3
TRITIUM IN GROUNDWATER
NOVEMBER 2005
BRAIDWOOD STATION
Braceville, Illinois

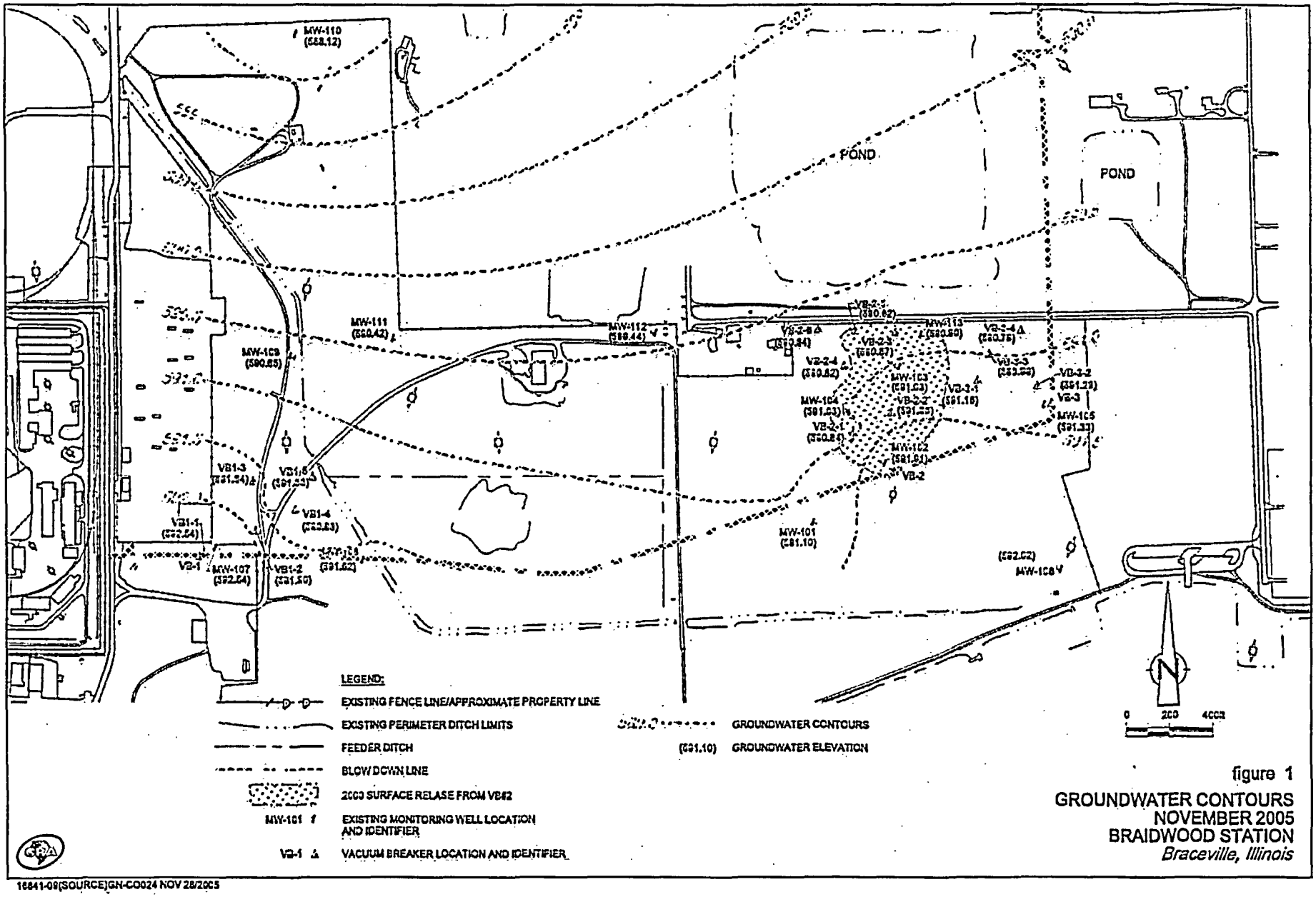


figure 1

GROUNDWATER CONTOURS
NOVEMBER 2005
BRAIDWOOD STATION
Braceville, Illinois

16841-09(SOURCE)GN-C0024 NOV 28/2005

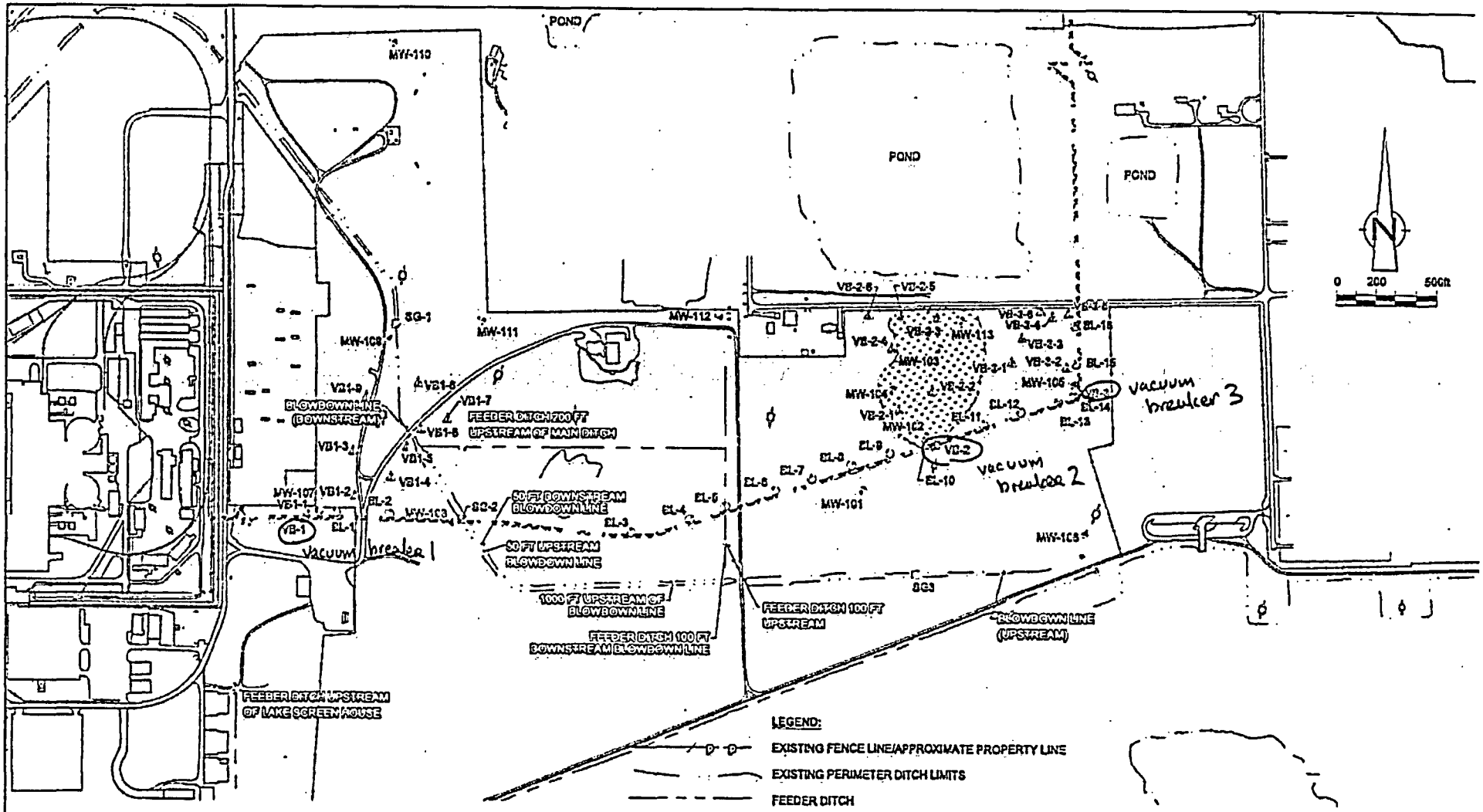
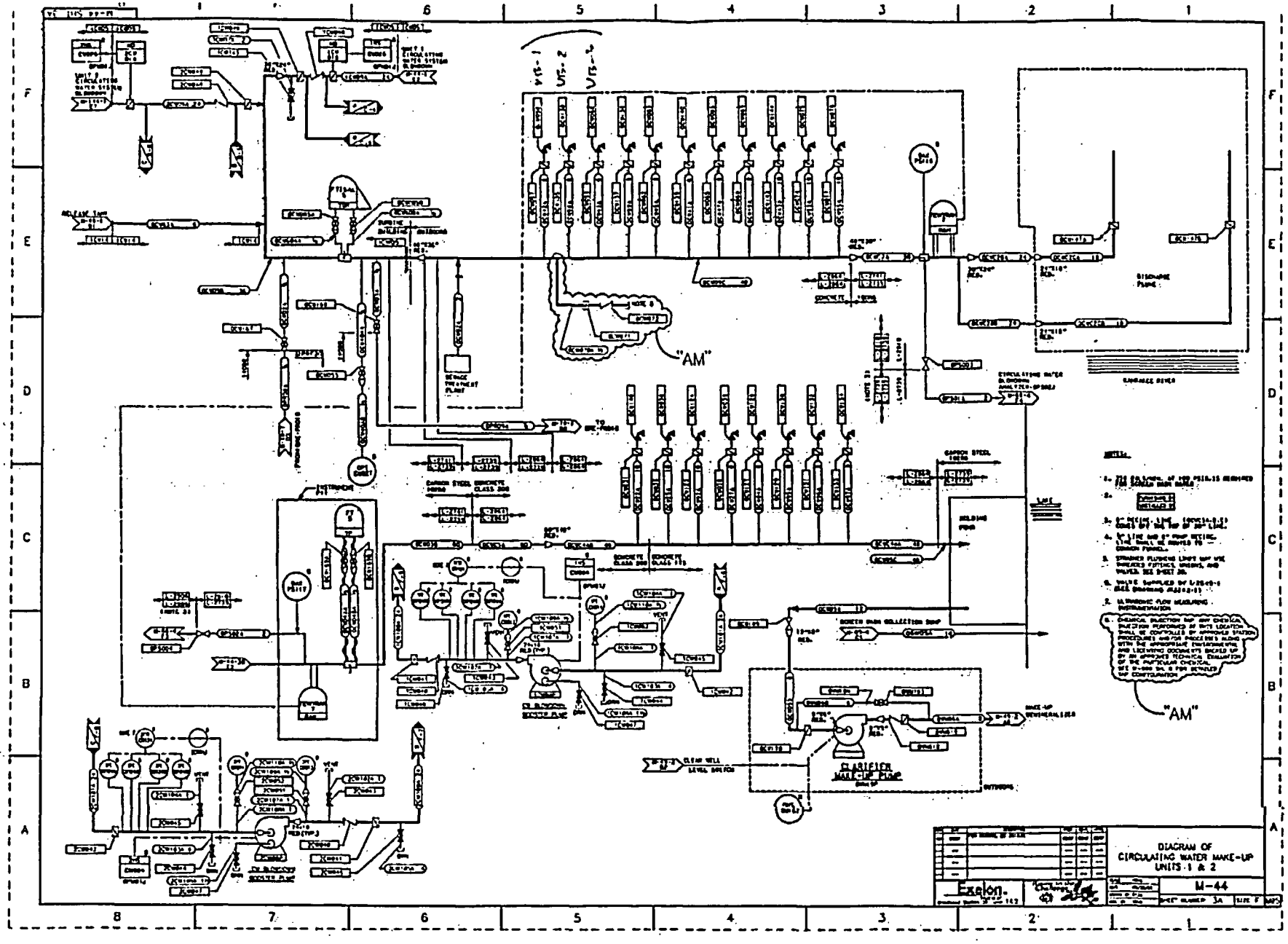


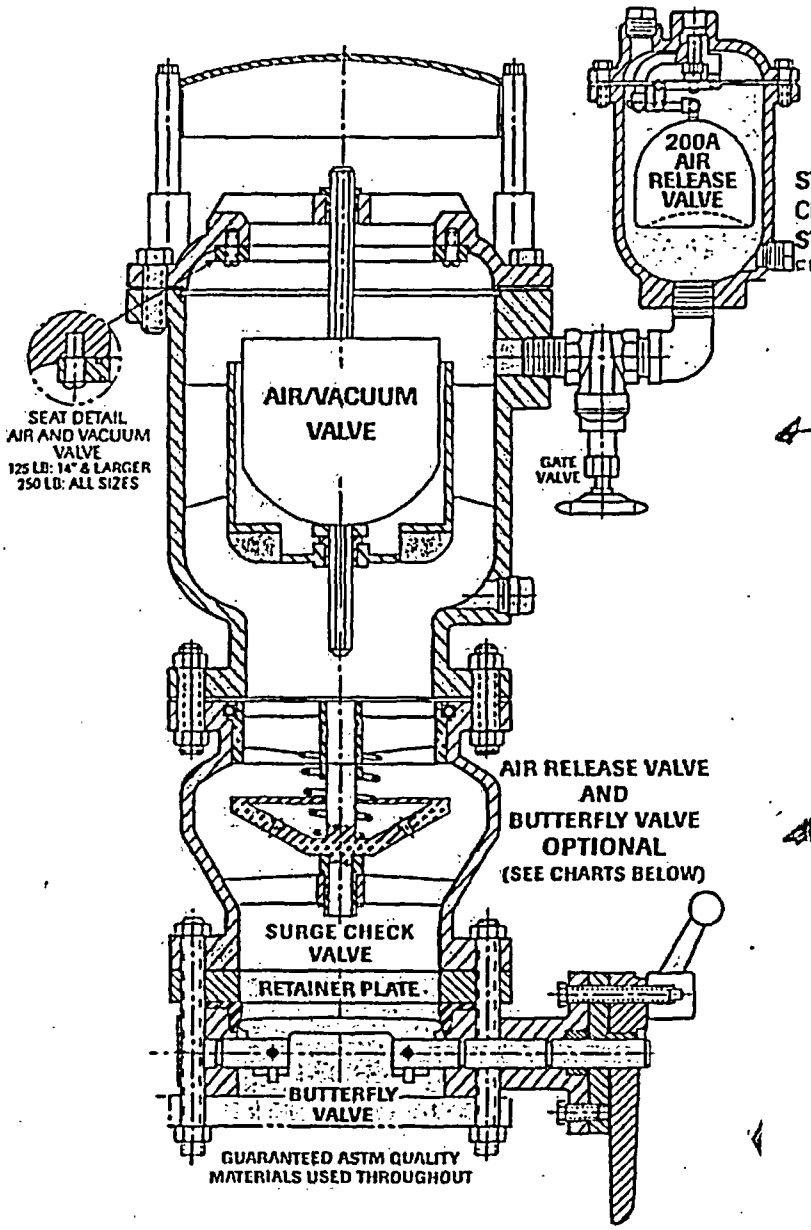
figure 1

SITE PLAN
AND WELL LOCATIONS
BRAIDWOOD STATION
Braceville, Illinois

16841-69(SOURCE)GN-CC020 NOV 28/2005


"AM"
"AM"
CLARIFIER MAKE-UP PUMP
DIAGRAM OF CIRCULATING WATER MAKE-UP UNITS 1 & 2
M-44
Exelon.

HOW TO SELECT APCO SLOW CLOSING AIR/VACUUM VALVES



STEP ONE:
CHECK PUMP CURVE FOR G.P.M. CAPACITY AT NO HEAD CONDITION.

STEP TWO:
ENTER CHART WITH G.P.M. TO DETERMINE SIZE

'DISCHARGE
VED OR
ED ONLY.

PERIODS
ELEASE

istallations.
partment.

IONAL) ELEASE /E NO.
00A
00A
00A
200
200
200
200

ontained
already in ser-

This the "float" valve that seals the vacuum breaker. This float turned causing the 2000 event.

This surge valve did not exist prior to 2000. It was added as a corrective action after the 2000 event to protect the float valve.

APCO AIR/VACUUM VALVE
Stainless Steel float and trim, synthetic, non-destructible seat. Positively will not blow shut even at maximum discharge velocities. Regular 125 lb. or 250 lb. flange mates with similar flange on Surge Check Unit.

APCO SURGE CHECK VALVE
Bronze trim and Stainless Steel spring for ultimate in protection.

APCO AIR RELEASE VALVE
Will open while line is in operation against pressures up to 300 PSI to exhaust small pockets of entrained air. Stainless Steel Concave Float. (Higher pressure valves available.)

Simplicity of design — no delicate needle valves to fail or need adjustment. Positively will not blow shut.

REPLACE SHUT-OFF VALVE WITH APCO BUTTERFLY VALVE
Costs to excavate pipeline trenches can be greatly reduced by using APCO Butterfly Valves for isolation instead of gate valves. APCO Butterfly Valves are economical, reliable and much shorter, permitting a reduction in depth of the trench.

SERIES 1900
AIR/VACUUM VALVE & SURGE CHECK VALVE

VALVE SIZE	MODEL NO.	MAX. DIAM.	HEIGHT 125 LB	HEIGHT 250 LB
4"	1904	11¾	25¾	25¾
6"	1906	13¾	30¾	30¾
8"	1908	17¾	34¾	35¾
10"	1910	20	38¾	39¾
12"	1912	29	45¾	45¾
14"	1914	29	46¾	46¾
16"	1916	32	49¾	49¾

SIZES 3" & SMALLER, SEE BULLETIN 586

SERIES 1700
AIR/VACUUM VALVE, SURGE CHECK VALVE & AIR RELEASE VALVE

MODEL NO.	WIDTH	HEIGHT 125 LB	HEIGHT 250 LB
1704	19¾	27¾	28
1706	22¾	31¾	32¾
1708	25¾	34¾	35¾
1710	27¾	38¾	39¾
1712	32¾	45¾	45¾
1714	41¾	45¾	45¾
1716	45¾	49¾	49¾

SERIES 1300
AIR/VACUUM VALVE, SURGE CHECK VALVE & BUTTERFLY VALVE

MODEL NO.	WIDTH	HEIGHT 125 LB	HEIGHT 250 LB
1304	15¾	28¾	29¾
1306	18¾	34¾	34¾
1308	23¾	40¾	41¾
1310	25¾	45¾	45¾
1312	28¾	54¾	54¾
1314	31¾	55¾	55¾
1316	33¾	60¾	60¾

SERIES 1200
AIR/VACUUM VALVE, SURGE CHECK VALVE AIR RELEASE & BUTTERFLY VALVE

MODEL NO.	WIDTH	HEIGHT 125 LB	HEIGHT 250 LB
1204	19¾	30¾	30¾
1206	22¾	35¾	36
1208	25¾	41¾	42¾
1210	27¾	45¾	46¾
1212	32¾	50¾	50¾
1214	41¾	52¾	52¾
1216	45¾	55¾	55¾

LARGER SIZES READILY AVAILABLE — CONTACT FACTORY.

AIR VALVES SLOW CLOSING AIR/VACUUM VALVES

From: Richard Skokowski
To: Gregory Roach
Date: Wed, Nov 30, 2005 4:18 PM
Subject: Re: CW Blowdown vacuum breakers

thanks

>>> Gregory Roach 11/30/05 4:17 PM >>>
Rick,
A quick synopsis with a copy of 2000 root cause CAPR's and 2005 IR response to NRC inquiry to follow.

In 2000 the licensee experienced a failure of the #2 vacuum breaker(VB) in the CW blowdown system which resulted in flooding of the area in the vicinity of the VB. The licensee determined that the VB failed to due to fatigue failure (# of cycles over lifetime) of the valve float assembly. This was exacerbated by the lack of surge protection for the float assembly which seals the valve shut when the piping is full of water. A water hammer appears to have damaged the unprotected float preventing it from sealing shut, allowing an estimated 3 million gallons of water to escape. The CAPR's included installing a surge protection feature on the VB's and modifying the preventative maintenance program for the VB's.

In May 2005 the licensee identified a 20 dpm leak from the pilot valve of VB-1. Tritium contamination was limited to the VB-1 well which is in the vicinity of the switchyard with no tritium leaving the site boundaries. The escape path for the water through the pilot valve is significantly smaller than that of the main valve, hence the much smaller release of water. Following NRC inquiry, the licensee responded that the elastomer components in the pilot valves are subjected to higher pressures and are subject to the corrosive effects of the raw water they are exposed to. The licensee's response to the NRC RIO inquiry stated that they were making additional modifications to their PM program and again increased the rate of visual inspections.

CAPR's and IR to follow.
Greg

CC: Steven Orth

From: Richard Skokowski
To: Nirodh Shah
Date: Wed, Nov 30, 2005 4:26 PM
Subject: Re: Tritium Contacts

Thanks

>>> Nirodh Shah 11/30/05 4:25 PM >>>
Rick, here are the people that Bwd contacted re: the tritium:

IEMA: Asst. Director Wright
Cecil Settles (no title provided)
Mike Parker, Nuclear Facilities Mgr. (Cecil's boss)
Rich Allen, Environmental Manager

Corinne Gordon, Illinois District Representative (i.e., State Congresswoman)
Tom Dahl, Illinois State Senator

Mayor of Braidwood

The licensee did not contact county officials or the mayor of Godley. The licensee was in the process of contacting the IEPA and should get the names to us by the morning.

thanks..N

CC: Roland Lickus; Steven Orth