IMMEDIATE

PRELIMINARY NOTIFICATION

April 1, 1979

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-79-67G

This preliminary notification constitutes summary information of an event of safety or public interest significance. The information presented is a summary of information as of 7:00 am on 4/1/79.

Facility: Three Mile Island Unit 2
Middletown, Pennsylvania (DN 50-320)

Subject: NUCLEAR INCIDENT AT THREE MILE ISLAND

Plant Status

There has been no substantial change in the primary system temperature and pressure. Incore thermocouples continue to show a downward trend.

Actions are underway to vent radioactive gases from the waste gas decay tank to the containment building. This will be performed through a temporary pipeline.

The licensee plans to hook up and shield two recombiners prior to initiating recombining operations to reduce the concentrations of hydrogen in the containment. The licensee estimates that it will require about 24 hours before the recombiners will be operational.

Calculated values by the licensee of the volume of noncondensible gases above the core continue to vary. The NRC staff has been unable to draw meaningful conclusions from this data.

Environmental Status

ARMS flights at approximately 3-hour intervals were continued on March 31 and the early hours of April 1. Survey results reflected stable conditions. Maximum readings were 2 mR/hr in the plume at a distance of 1 mile from the plant. The plume width has been about 1.5 miles out to a distance of 10 miles. At a distance of 10 miles, plume readings were 0.15 mR/hr. Milk was collected at nine stations on March 31; no radioactive iodine was detected. Offsite ground level gamma surveys performed in the predominant wind direction showed a maximum of 0.6 mR/hr at 500 yards from the plant to a low of 0.06 mR/hr at distances of 2 to 3 miles. An exception was noted during the collection of a sample from the waste gas decay tank when gamma levels of 3 mR/hr were observed at a distance of 500 yards east of the plant.

CONTINUED

Other Information

Analysis of a sample of primary coolant indicated that the principal isotopes released from the fuel were iodine, cesium and noble gases. A preliminary evaluation of the analytical results related to these more volatile isotopes indicates high fuel temperatures existed, perhaps for extended periods. However, ratios among isotopes indicate that the less volatile isotopes, such as strontium, were released to the coolant in quantities characteristic of releases from the gaps of the fuel and, therefore, based on this preliminary evaluation, melting of the fuel is not considered likely to have occurred.

Analysis of a containment building gas sample showed the following results:

Isotope	Concentration (microcuries/milliliter)
Xe-133	676
Xe-133m	16
Xe-135	8.1
I-131	6.3×10^{-2}
I-133	< 0.03

NRC representatives at the facility were informed at 10:45 p.m. on March 31 that there would be an attempt to sabotage the facility during the night. The FBI, Pennsylvania State Police and the licensee were notified.

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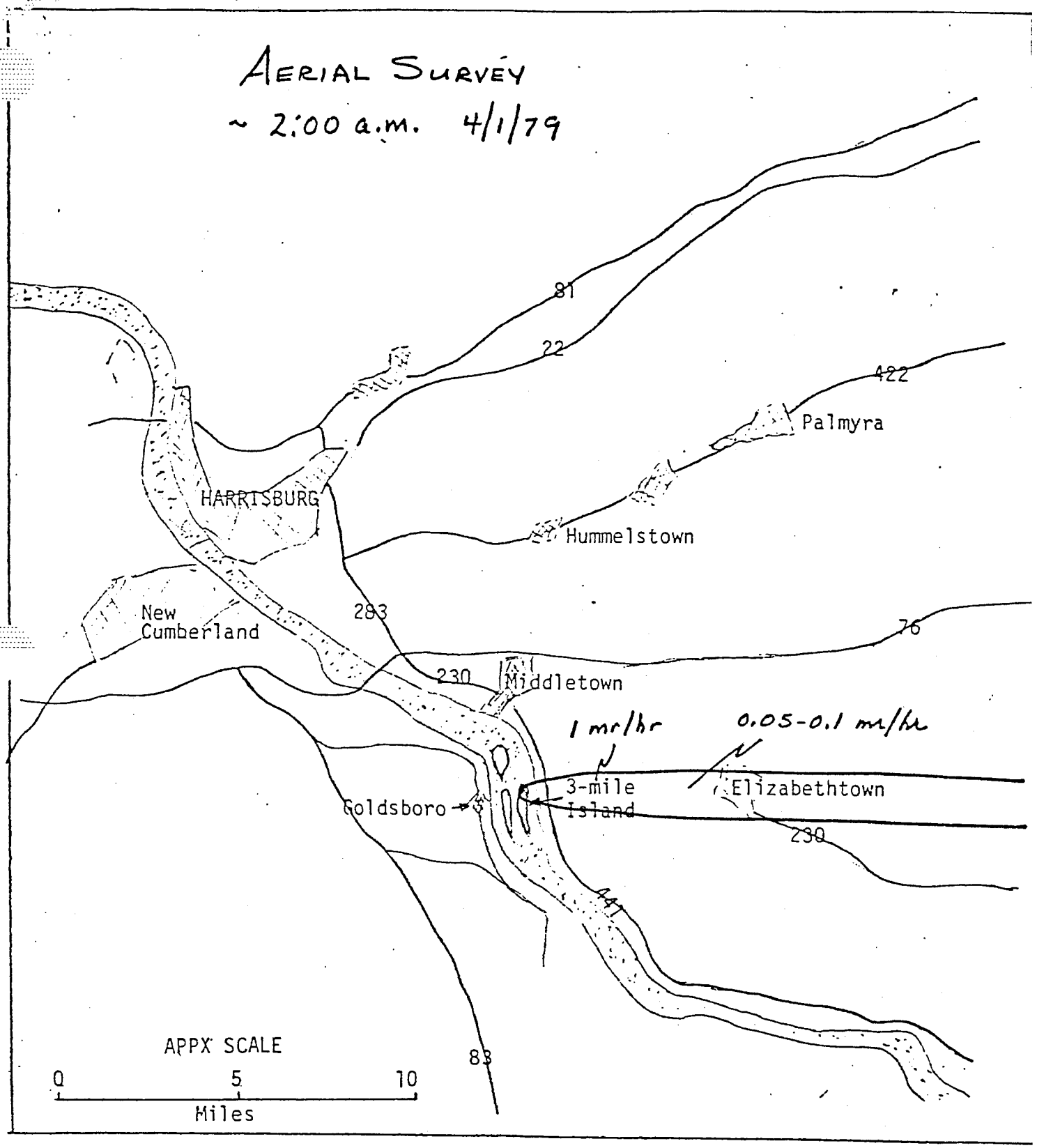
Attachment (1)
Radiation Survey Map


AERIAL SURVEY
~ 2:00 a.m. 4/1/79
81
22
422
Palmyra
HARRISBURG
Hummelstown
New Cumberland
283
76
230
Middletown
1 mr/hr
0.05-0.1 mr/hr
3-mile Island
Goldsboro
Elizabethtown
230
441
83
APPX SCALE
0
5
10
Miles