

Designation of access restricted area due to body contamination of workers at Plutonium Fuel Research Facility (PFRF)

1. Date and time of occurrence

Around 11:15 AM, June 6(Tue), 2017.

2. Place of occurrence

Room 108 of PFRF (within controlled area)

3. Chronology

Around 11:15, at Room 108 of the PFRF in Oarai Research and Development Center (within the controlled area) during the inspection work of the storage container containing the nuclear fuel material (the operation inside the hood), the rupture of the plastic bag filled with the container containing the nuclear fuel material in the storage container was confirmed. As a result of a physical survey, we confirmed the radioactive contamination of hands and feet of all five workers at 11:37.

At 13:55, we confirmed the increase in the indicated value of the Pu dust monitor (Room 108) in the controlled area. (approx.. 5×10^{-8} Bq / Cm³ (average weekly concentration))*

At 14:44, Body contamination test of workers began and intranasal contamination (maximum 24 Bq (α ray)) was observed on 3 workers out of 5 at 16:20.

At 16:27, Room 108 was designated as an entry restricted area.

* Air concentration limit stipulated by laws and regulations: 7×10^{-7} Bq / cm³

4. Environmental Impact

There is no environmental impact.

(No abnormality was detected by ventilation dust monitors and monitoring post)

5. Effect on workers

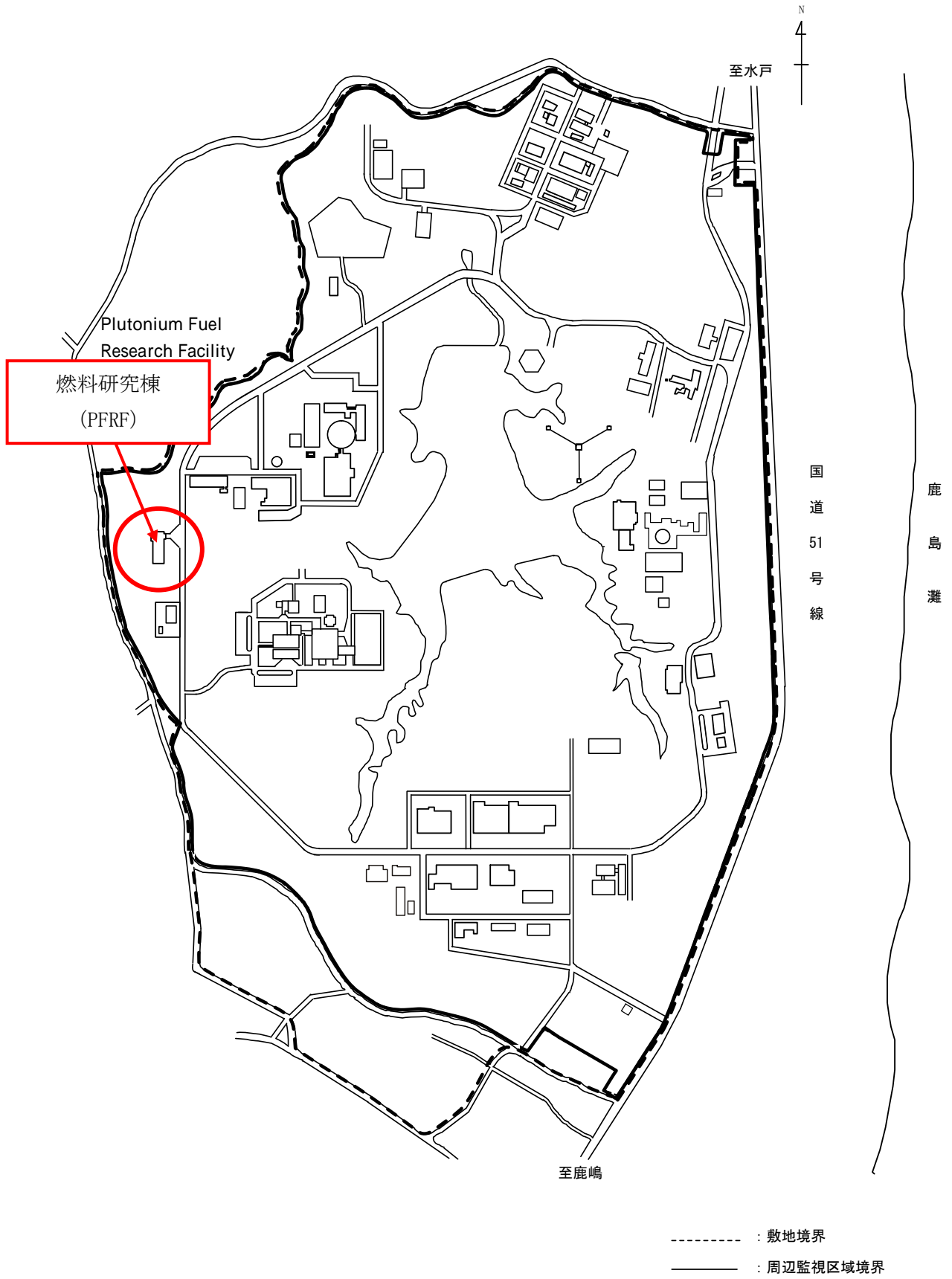
Confirmation of contamination on hands and feet of all 5 workers (no injured person)

Three out of five workers were contaminated intranasally. (maximum 24 Bq (α ray))

In addition, five workers were wearing half-faced mask.

6. Cause of accident

Under investigation



添付1 大洗研究開発センター施設配置図

Facility layout of Oarai Research and Development Center

Outline of Plutonium Fuel Research Facility (PFRF)

PFRF was completed in 1974 with the aim of conducting R&D on new fuels for fast reactors, etc. Test using plutonium started in 1977.

In this facility, fabrication and research on physical property of new fuels such as uranium-plutonium mixed oxide fuel, nitride fuel, long-lived minor actinide nuclear transmutation fuel and metallic fuel for fast reactors, fabrication of fuel pins for irradiation test aiming for verification of fuel soundness and research concerning dry type separation using electrolysis of molten salt.

In FY 2013, a policy to abolish this facility was decided, and planning for treatment for stabilizing the nuclear fuel materials used in experiment and decommissioning of the facility is moved forward with.

Facility outline:

two-story building, fire-resistive construction with reinforced concrete, 1518 m² of total floor space (controlled area is 570 m²)

Main equipment:

Main facility

glove box: 36 (air atmosphere: 25, high purity argon atmosphere: 11)

argon circulation generator: 4

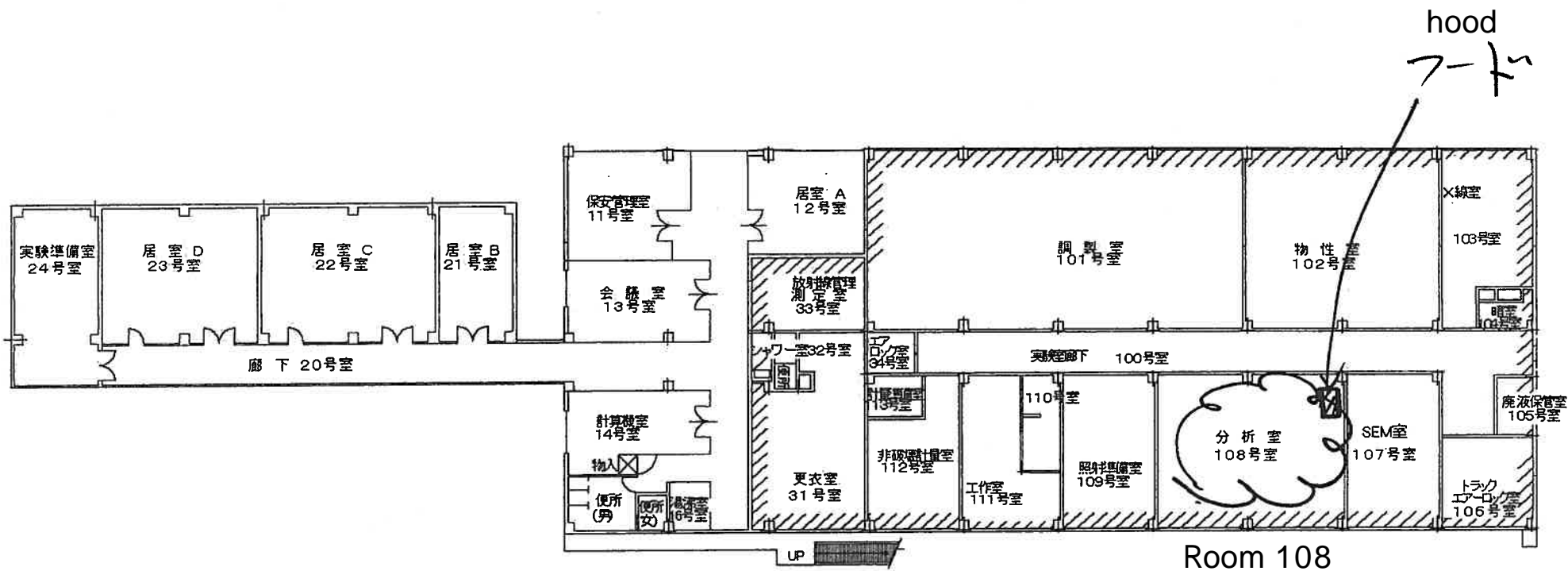
Hood: 4

Major test device

powder molding press, sintering furnace, X-ray diffraction device, electron beam analysis device, oxygen/nitrogen analysis device, carbon analysis device, fuel pin welding device, etc.

Special facility

gas disposal equipment, liquid disposal equipment, power supply equipment, air compression equipment, etc.



1 階平面図

斜線部は管理区域を示す。

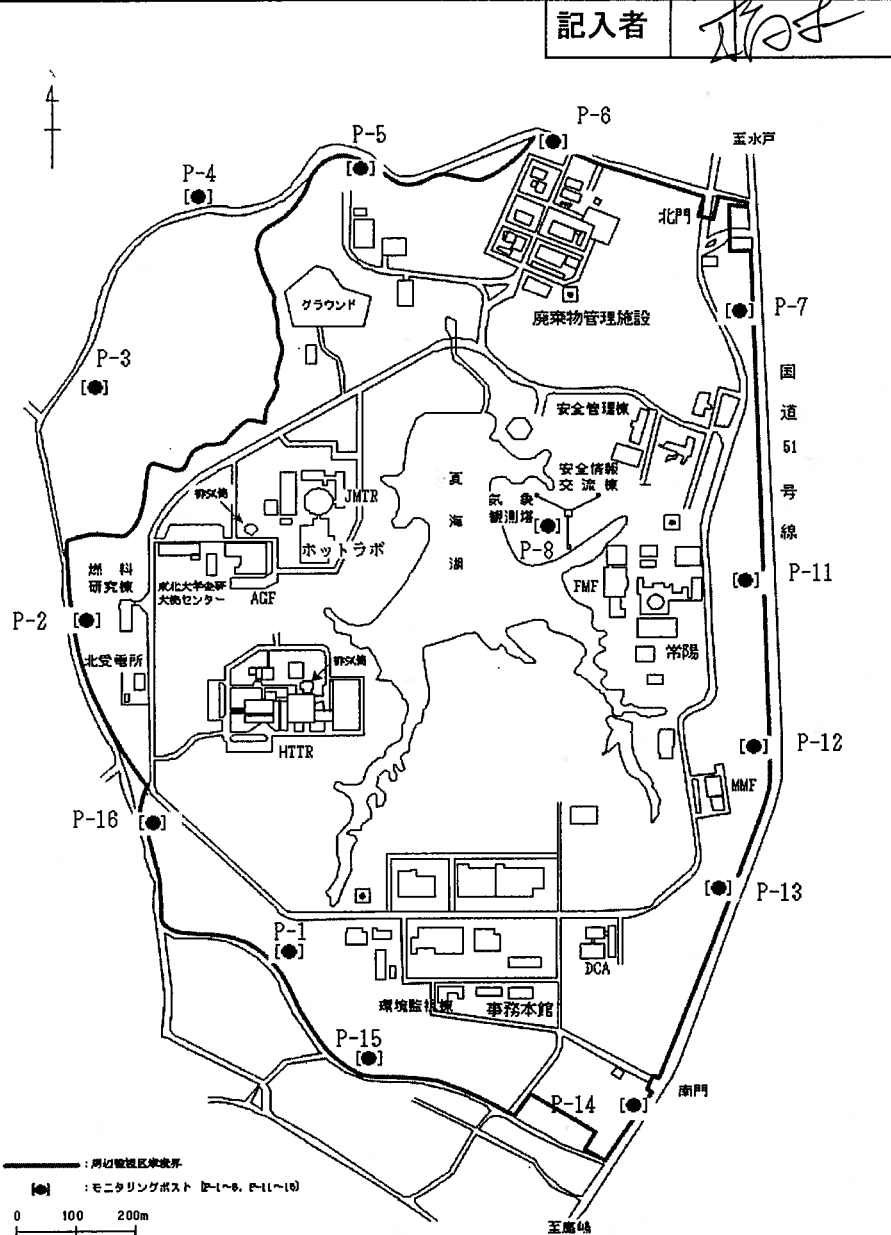
添付 3 燃料研究棟平面図

Plan view of PFRF

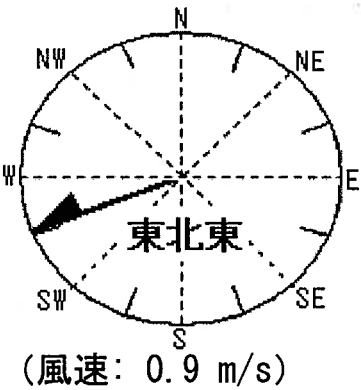
Emergency environmental monitoring result

緊急時環境監視結果 (2017年06月06日16時17分)

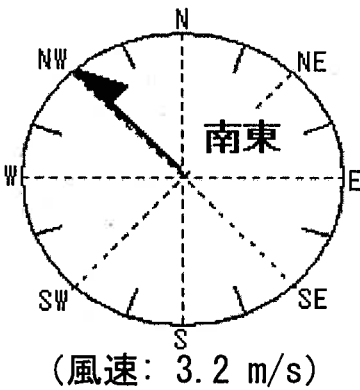
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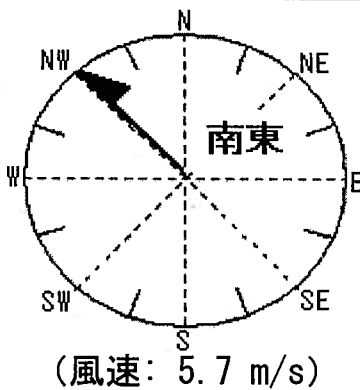
10m高風向・風速



40m高風向・風速



80m高風向・風速



大気安定度 A B C D E F G 感雨 有・

Measurement value of monitoring post

Measurement value				Normal value			
ポストNo.	測定値 (nGy/h)	平常値 (nGy/h)	異常	ポストNo.	測定値 (nGy/h)	平常値 (nGy/h)	異常
P-1	64	63 55~80	有・無	P-11	106	105 91~121	有・無
P-2	62	65 58~81	有・無	P-12	95	92 81~105	有・無
P-3	52	54 46~67	有・無	P-13	67	69 58~84	有・無
P-4	60	59 52~68	有・無	P-14	58	58 50~82	有・無
P-5	58	57 51~70	有・無	P-15	64	65 56~78	有・無
P-6	52	55 49~68	有・無	P-16	55	53 45~66	有・無
P-7	77	78 69~91	有・無	特記事項: 平常値の欄の上段の数値はH29年 3月の1時間平均値。下段の数値は1分値の最小~最大値を使用。			
P-8	56	58 51~71	有・無				

備考欄
 H23年3月以降、福島第一原子力発電所事故の影響により事故前に比べ高い線量率で推移している。
 (※) 緊急事態発生時において実効線量に換算する場合、環境放射線モニタリング指針に基づき換算係数1 (Sv/Gy) を適用する。

添付4