

# Fukushima Daiichi Nuclear Power Station

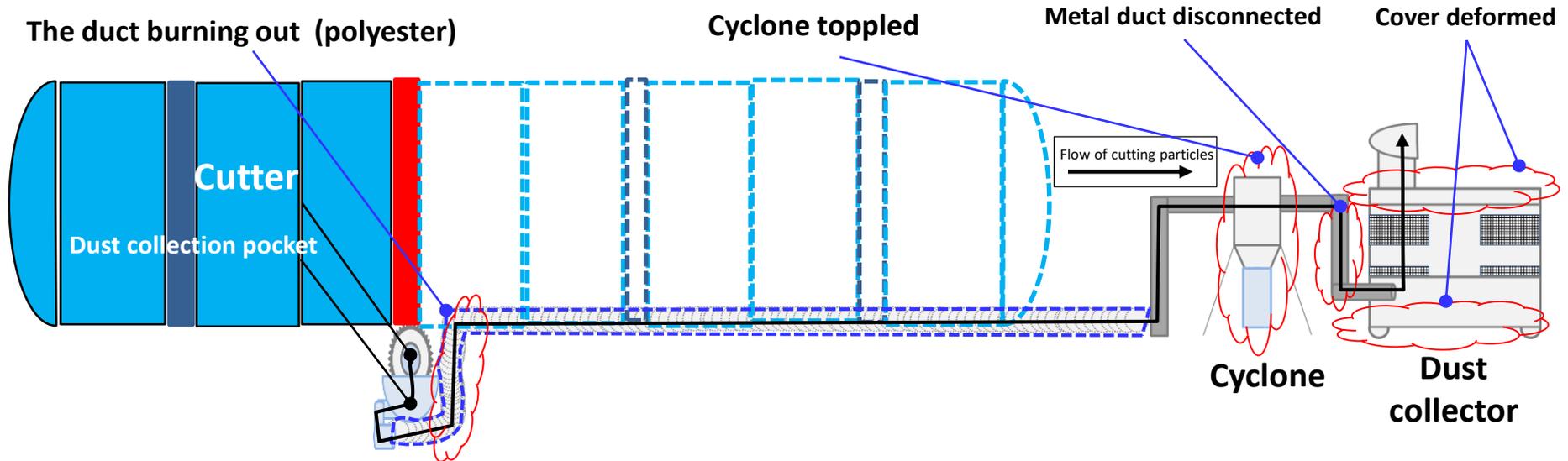
## Cause and a direction of countermeasures of the fire that occurred in the periodic inspection equipment storage warehouse B (site of horizontal tanks dismantling)

- On February 3, 2025, a contractor worker discovered a fire breaking out in the dust collection equipment in the periodic inspection equipment storage warehouse B (site of horizontal tank dismantling), and the fire breaking was declared a “fire” by the Futaba Fire Department. (\*Since the horizontal tank being dismantled was unused so there is no contamination, there are no injuries.) <Announced on February 3>
- Cutting of horizontal tanks is performed by lubricating the cutter for cutting with cutting oil and collecting high temperature scrap of metals by a dust collector, etc. via ducts, and we confirmed that a part of the duct was burned out and the cover of the dust collector was deformed, etc.
- Also interrupted the dismantling of the horizontal tank to conduct an investigation and found that the dial for adjusting the cutting oil sprayed onto the cutting wheel volume was set higher than normal and that clumps of cutting scrap had accumulated in the duct.
- In light of this, it is assumed that the cause of the duct fire damage and etc. is as follows:

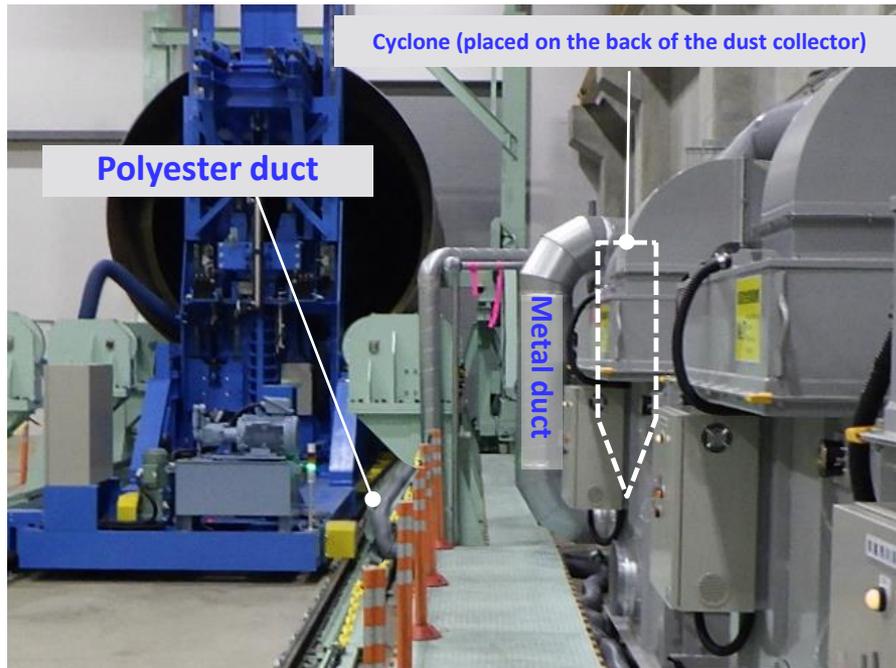
The duct burning out (Primary incident)	The cutting oil adjustment dial was unintentionally changed dulling preparation work on the day causing many clumps of cutting scraps were generated and accumulated inside the dust collection pocket and duct. Decreased the airflow and cooling function of the duct and dust collection pockets caused high temperature scraps of metals to not cool sufficiently leading to become a fire source and burning out of the duct. (Refer to page 5)
Dust collector cover deformation, etc. (Secondary incident)	The duct burning out caused high temperature gas and dust particles to be generated. Because of airflow inside the duct was restricted and the capacity of the cyclone to collect dust particles was decreased, high temperature gas and dust particles accumulated inside the dust collector and ignited. The resulting shock caused deformation of the dust collector cover and etc.. (Refer to page 6)

- Going forward, recurrence prevention countermeasures focused both on equipment design and operation such as preventing airflow inside of the dust collection pocket and duct from being restricted and cooling cutting scrap shall be deliberated and implemented for preventing the duct burning out. (Refer to page 7)

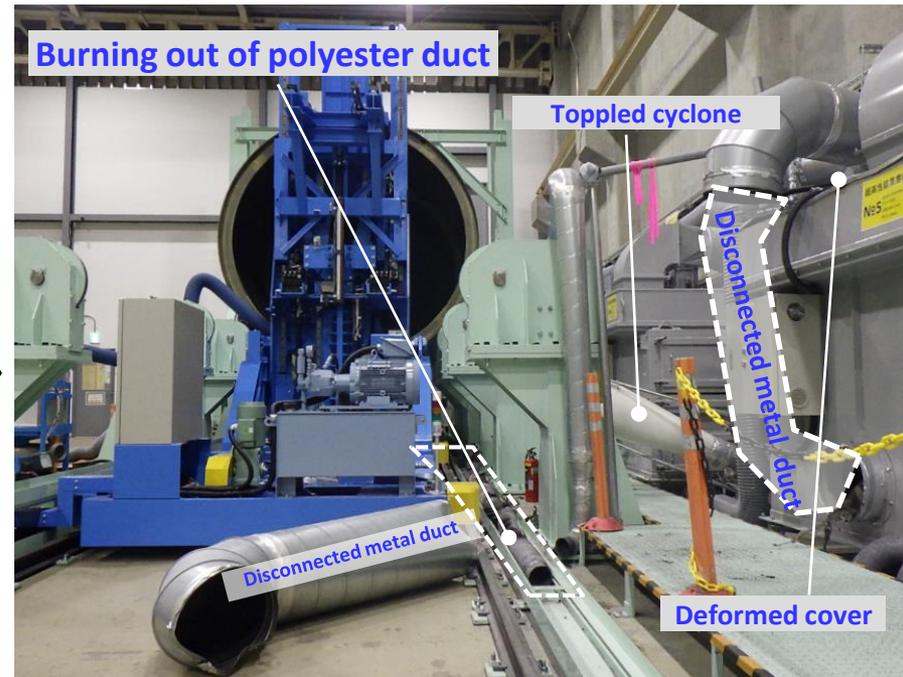
- Hot cutting scraps are generated when the cutter is used to cut the horizontal tank, so a cyclone trap the large particles and the filter inside the dust collector trap the fine particles, while also cooling by the intake air of the dust collector, etc.
- Around 2:00 PM on February 3, 2025, a fire broke out during cutting of the horizontal tank (unused) and the polyester duct connected to the dust collection pocket and cyclone was fire damaged.
- The cover of dust collector deformed and the cyclone toppled. The metal duct also became disconnected.



## 【Before incident】



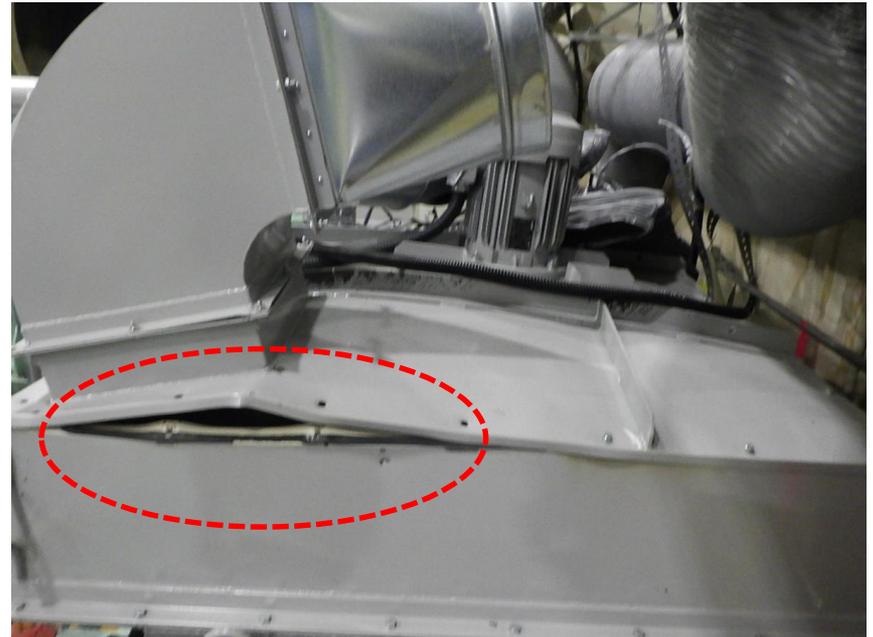
## 【After incident】



- When checking the adjustment dial for the cutting oil sprayed onto the cutter during cutting, it was found that the dial was pointed at 5.0mL/minute, which is more than normal (2.5mL/minute).
- Accumulated clumps of scraps of metal from the horizontal tank restricted airflow inside the duct.
- The top and bottom of the dust collector were deformed outward.



Duct with accumulated cutting scraps



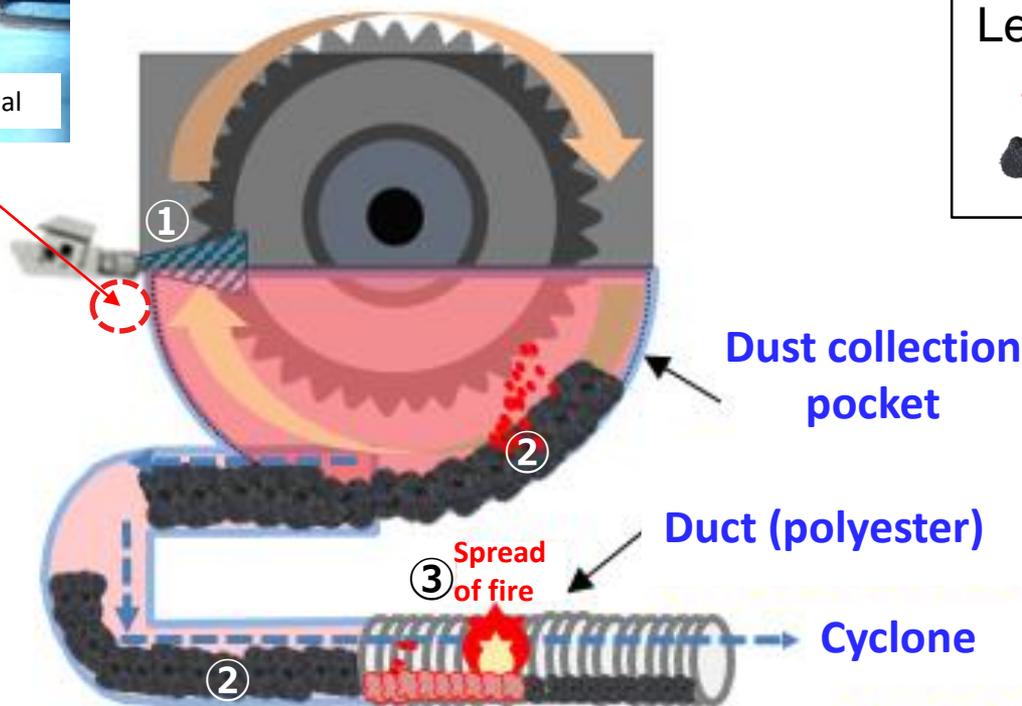
Top of dust collector deformed outward

# [Reference] Assumed mechanism of duct scorching (primary incident) **TEPCO**

The cutting oil adjustment dial was unintentionally changed dulling preparation work on the day (①) causing many clumps of scraps of metals were generated and accumulated inside the dust collection pocket and duct (②). Decreased the airflow and cooling function of the duct and dust collection pockets caused high temperature scraps of metals to not cool sufficiently leading to become a fire source and burning out of the duct (③).



## 【Around the area of the tank being cut】



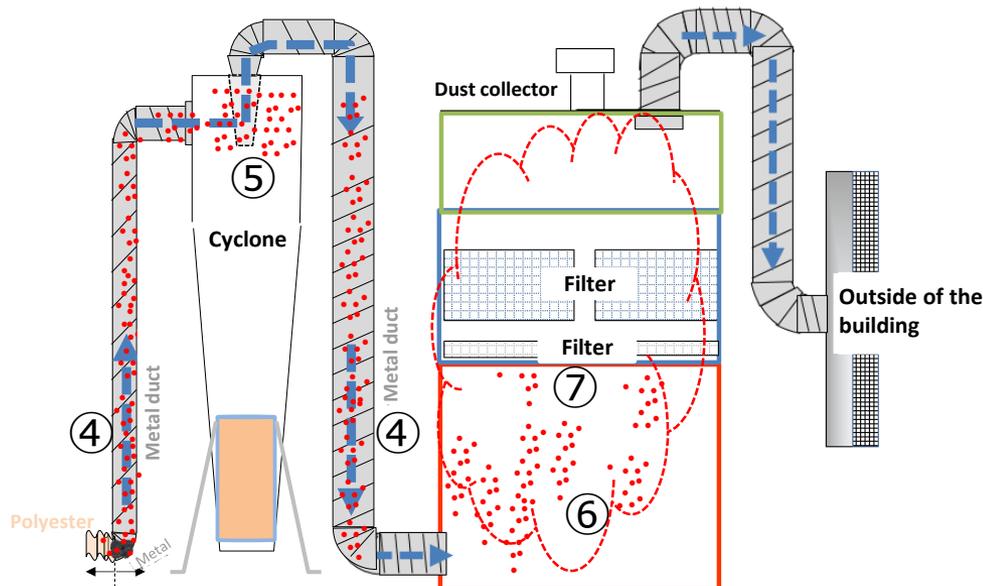
### Legend

- Cutting Scraps
- Clumps of cutting scraps

# [Reference] Assumed mechanism of dust collection cover deformation, etc. (secondary incident)

Duct burning out caused high temperature gas and dust particles to be generated (④). Because of airflow inside the duct was restricted and the capacity of the cyclone to collect dust particles was decreased (⑤), high temperature gas and dust particles accumulated inside the dust collector and ignited (⑥). The resulting shock caused deformation of the dust collector cover and etc. (⑦).

## 【Area around the cyclone/dust collector】

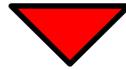


### Legend

- Dust particles
- High temperature gas

### 【Points to prevent recurrence】

Deformation of the dust collector cover was a secondary incident caused by the duct burning out, so it is important to prevent the duct burning out.



### 【Direction of the duct burning out prevention】

#### **Basic approach ①—Preventing airflow inside of the dust collection pocket and duct from being restricted**

- Consider to measure preventing the generation of cutting scraps and the accumulation of cutting scraps to accumulate inside the dust collection pocket and duct.

#### **Basic approach ②—Cooling cutting scraps**

- Consider to adopt a different cooling method in addition cooling by the intake air of the dust collector.



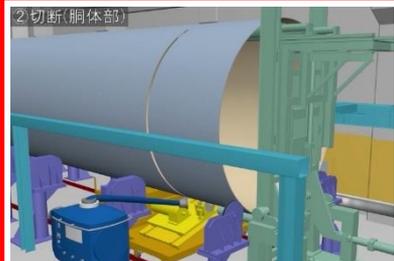
### 【Steps to resume operations】

In addition to implement tangible and intangible countermeasures, the dismantling of the horizontal tanks will be resumed only after safety has been confirmed through repeated checks using a mockup facility at an off-site.

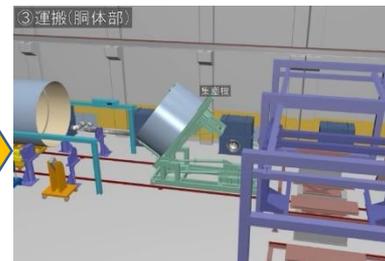
# [Reference] Horizontal tank dismantling



Carrying in/ Ancillary components removed



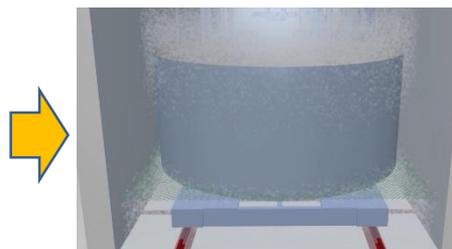
Cutting **The incident was occurred at this step**



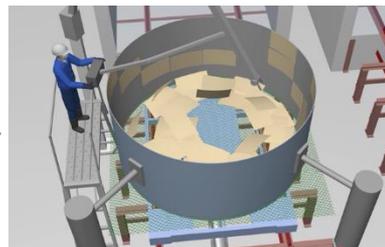
Reversed/ Transported



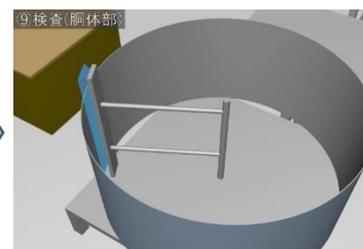
Laser irradiation



Refrigeration



FRP peeling



Dose measurement



Carried out

● 2D representation of each step and location of the incident

① : Duct burning out    ② : Dust collector deformation, etc.

Total length: Approx. 95m



Total width: Approx. 15m