Investigation Results of the Inside of Unit 2 PCV at Fukushima Daiichi Nuclear Power Station (Guide Pipe Removal)

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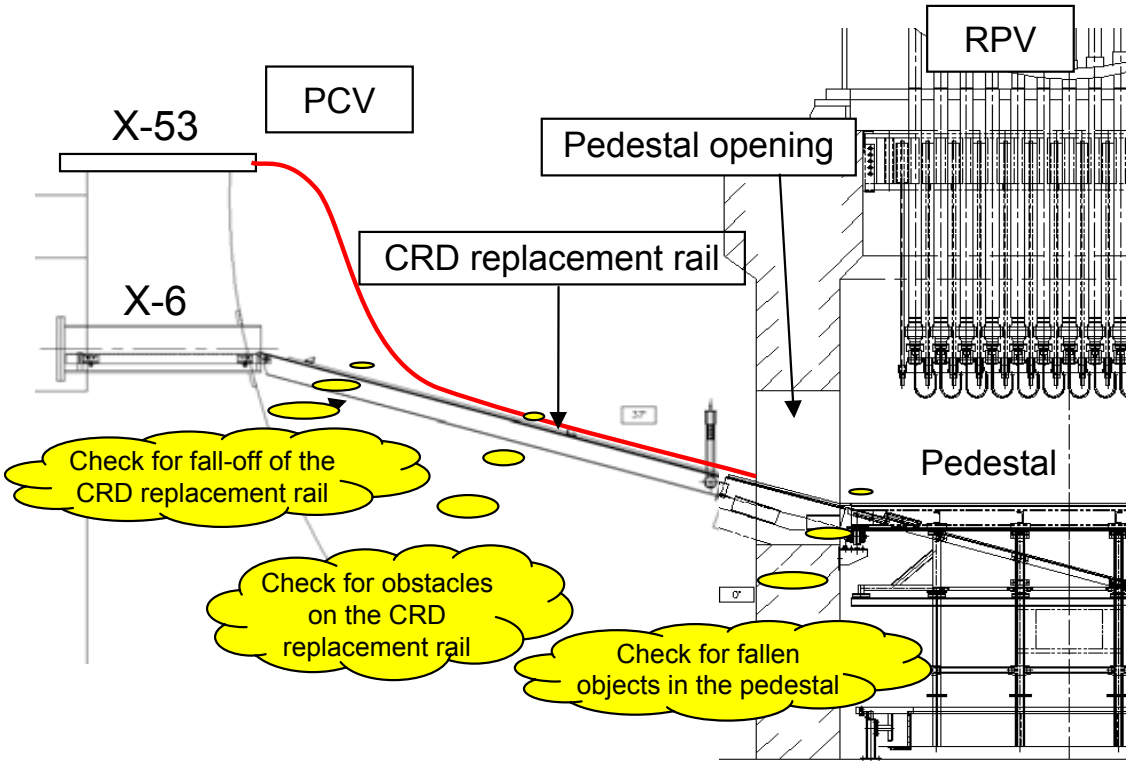
Tokyo Electric Power Company

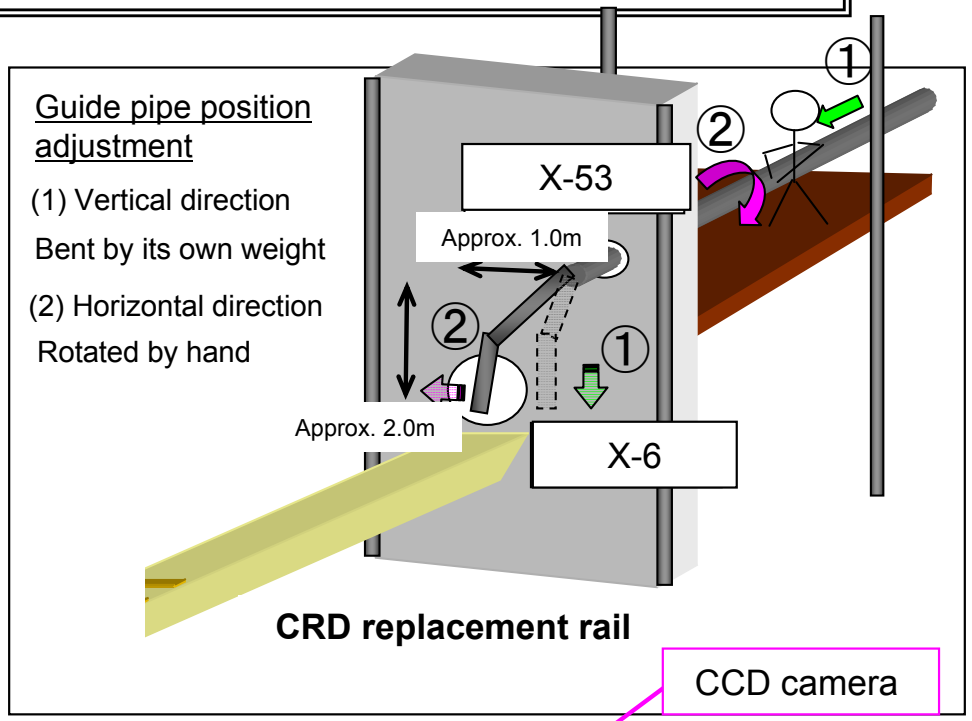
TEPCO 東京電力

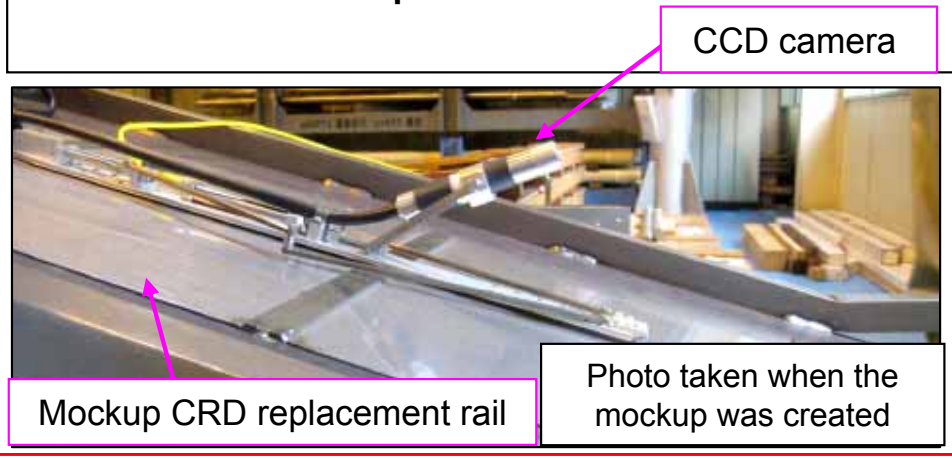
1. Overview of Investigation

An investigation equipment is inserted from X-53 penetration onto the CRD replacement rail to investigate the CRD replacement rail and the area around the pedestal opening.



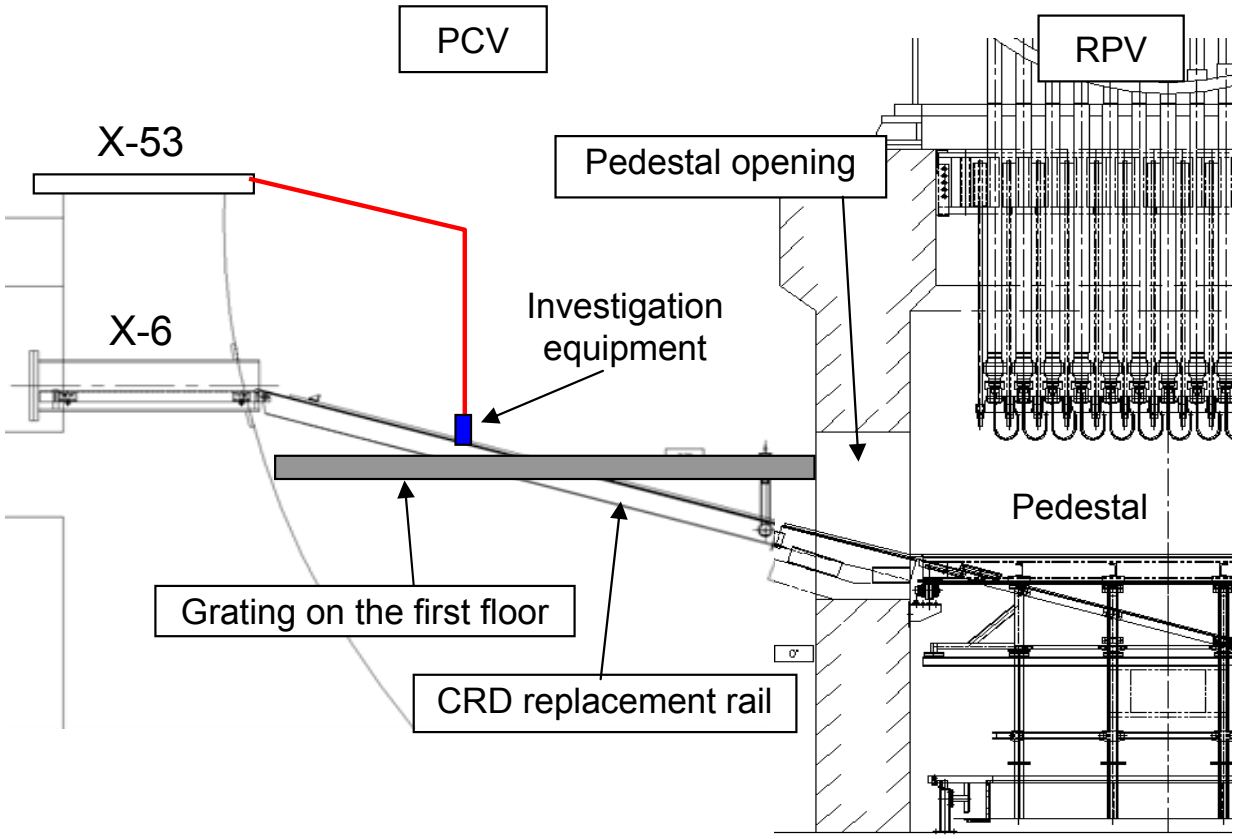
Scope of investigation from X-53





2. Investigation Results (Images)

The investigation was not performed as planned since the camera did not reach the CRD replacement rail. According to the video obtained, there is an object which assumed to be the CRD replacement rail in the upper right. The CRD replacement rail is assumed to be at approx. 300mm from the point where the camera was able to reach.



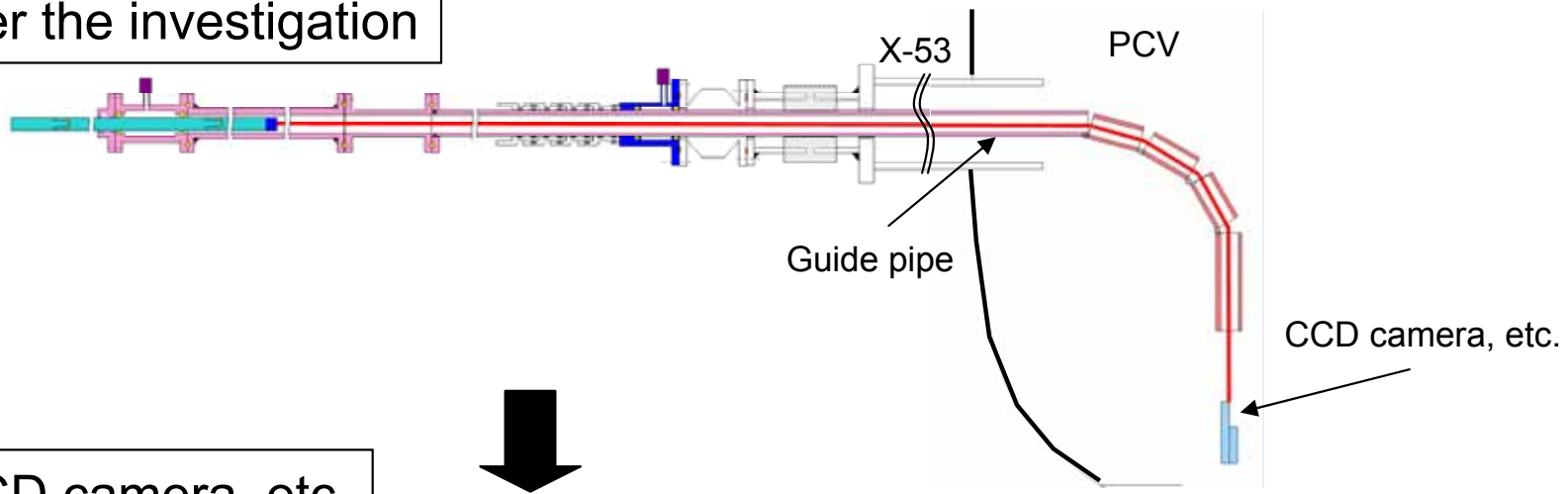
Assumed location where the camera reached

3-1. Condition of the Guide Pipe

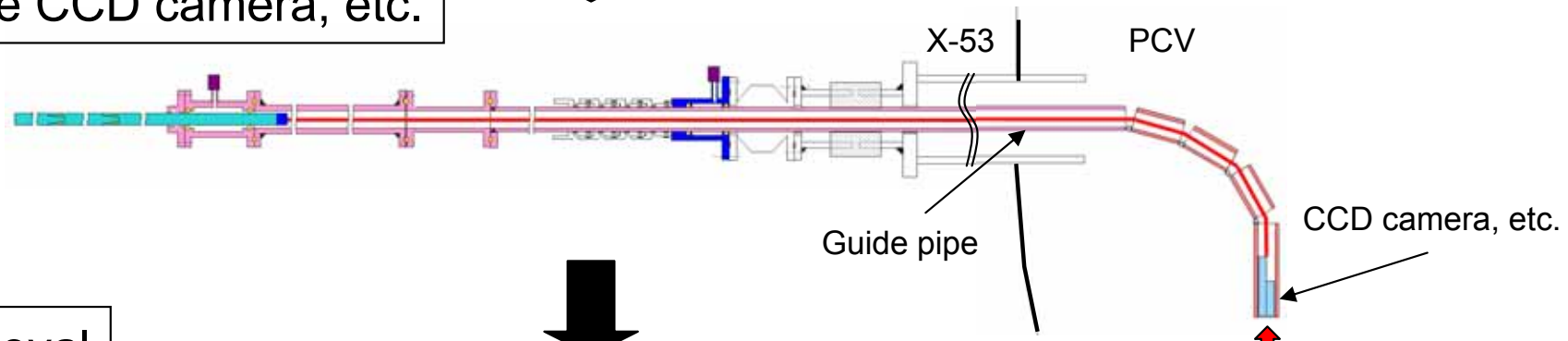
The guide pipe (GP) could not be removed after the investigation (March 19, 2013).

Regular GP removal procedure

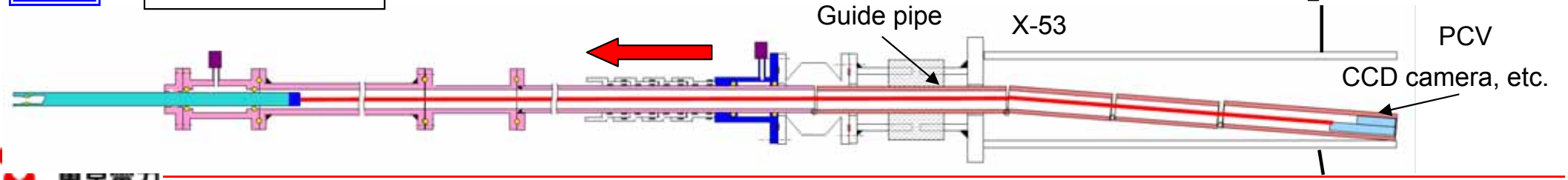
Condition after the investigation



Store the CCD camera, etc.



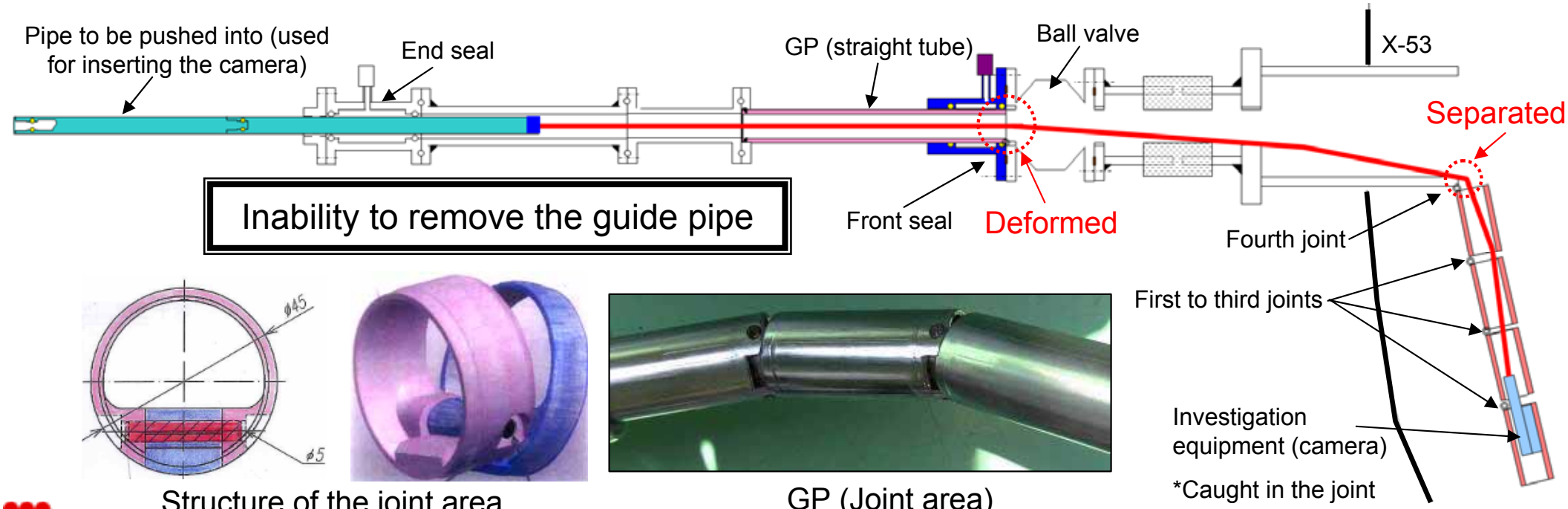
GP removal



3-2. Condition of the Guide Pipe

[Condition of GP]
(1) The straight tube and the fourth joint were separated (the condition of the first to the third joints is unknown)→The joint area cannot be pulled into the penetration.
(2) The straight tube of the GP (the fourth joint) is deformed→The deformed area interferes with the front seal and cannot be removed.

[Countermeasure]
While securing the PCV boundary, insert a stick with a seal attached and
(1) slowly put the joint parts into the PCV and (2) cut the straight tube of the GP and drop it into the PCV.



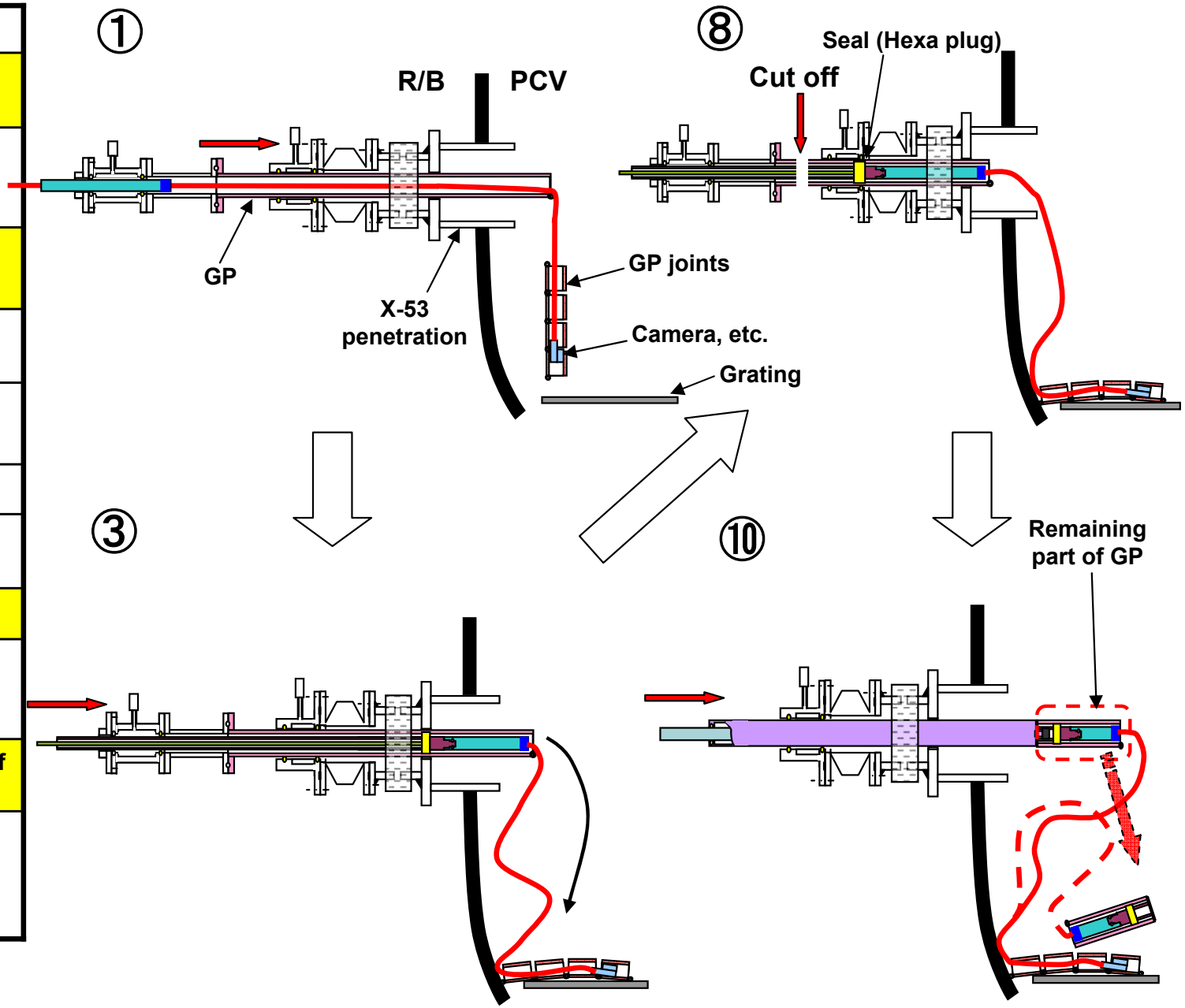
Inability to remove the guide pipe

Structure of the joint area

GP (Joint area)

4. Guide Pipe Removal Procedure (Overview)

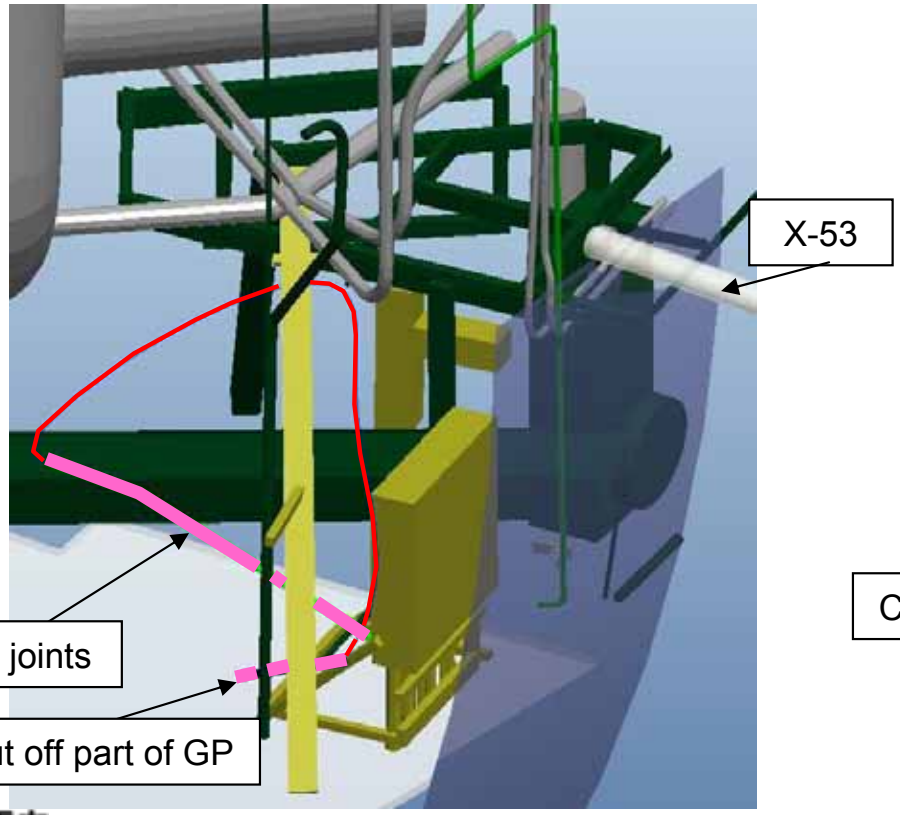
	Procedure
①	**Insert the GP to the point where work is performed.**
②	Install a stick with a seal attached on the pipe to be pushed into.
③	**Drop the GP joints onto the grating inside the PCV.**
④	Connect the extendable pipe to be inserted.
⑤	Push the seal inside the GP up to the seal location.
⑥	Operate the seal inside the GP.
⑦	Pull out the GP up to the point to be cut.
⑧	**Cut the GP off.**
⑨	Install the stick to be pushed into the PCV on the remaining portion of the GP.
⑩	**Drop the remaining portion of the GP.**
⑪	Pull out the stick which had been pushed into the PCV and close the isolation valve. Install the closure flange.



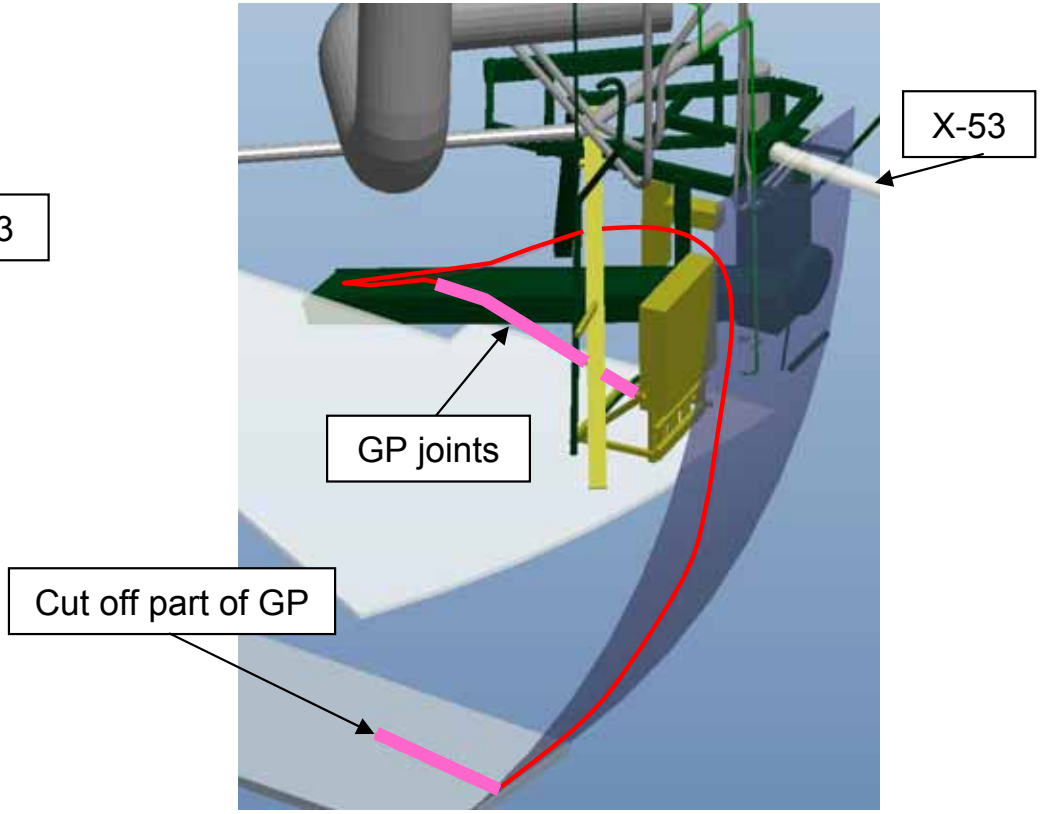
5. Impact of Dropping the Guide Pipe into the PCV

The following dropping routes (1) and (2) are assumed.
- There is no equipment used for plant cooling and status monitoring in the surrounding area of the drop route.
- The interference condition inside the PCV will be checked before the reinvestigation of the CRD rail.

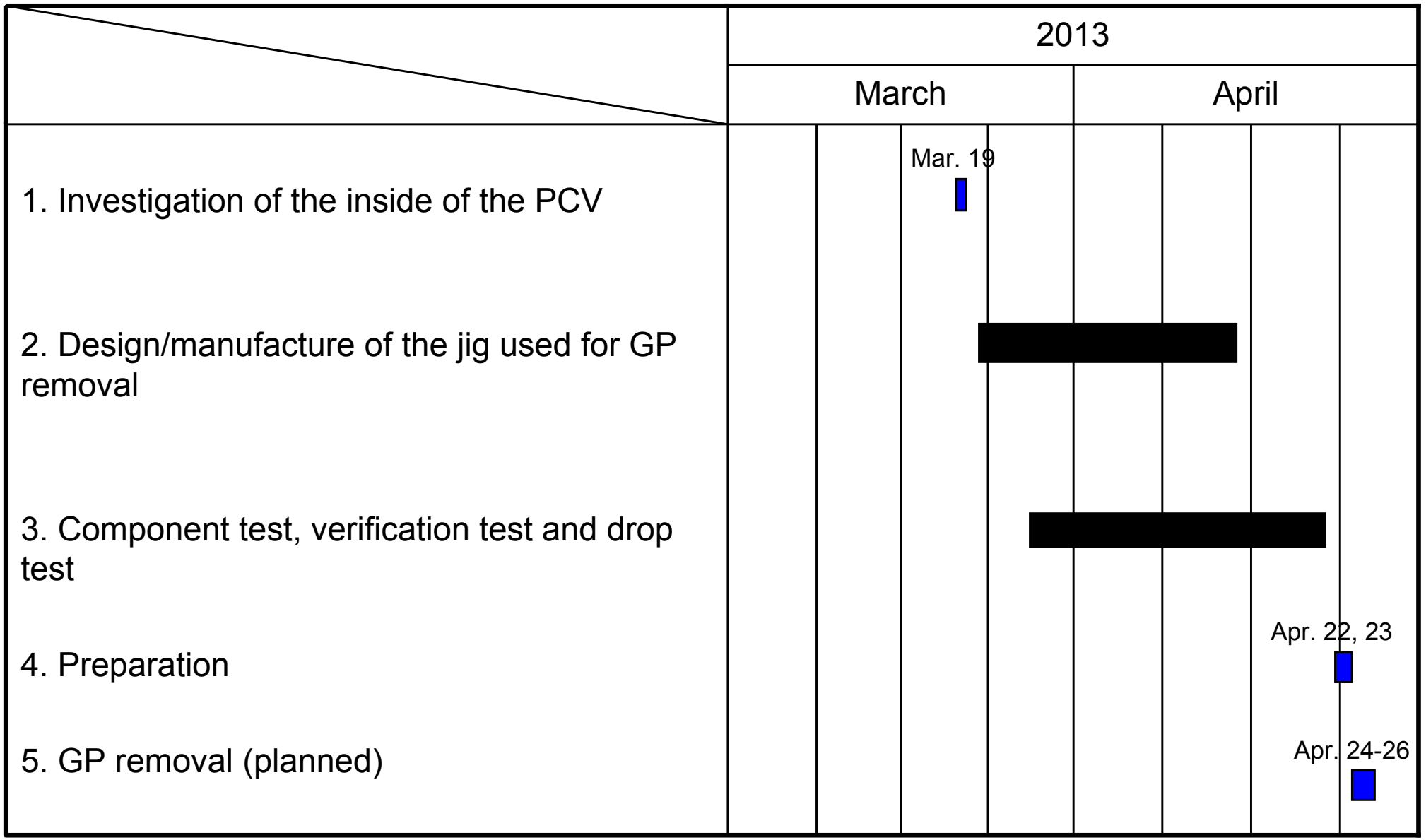
Route (1)
GP joints: dropped onto the grating
Cut off part of GP: dropped onto the grating



Route (2)
GP joints: dropped onto the grating
Cut off part of GP: dropped onto the bottom of the PCV



6. Schedule



The date for PCV reinvestigation is being discussed (The investigation equipment is planned to be improved based on the results obtained this time).