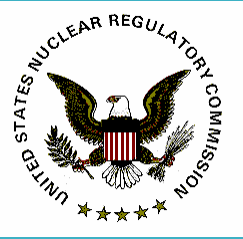




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Decontamination of NA2 Nozzles at PNNL

Dr. Steve Doctor, PNNL Program Manager
Dr. William Cullen, NRC Program Manager



United States Nuclear Regulatory Commission

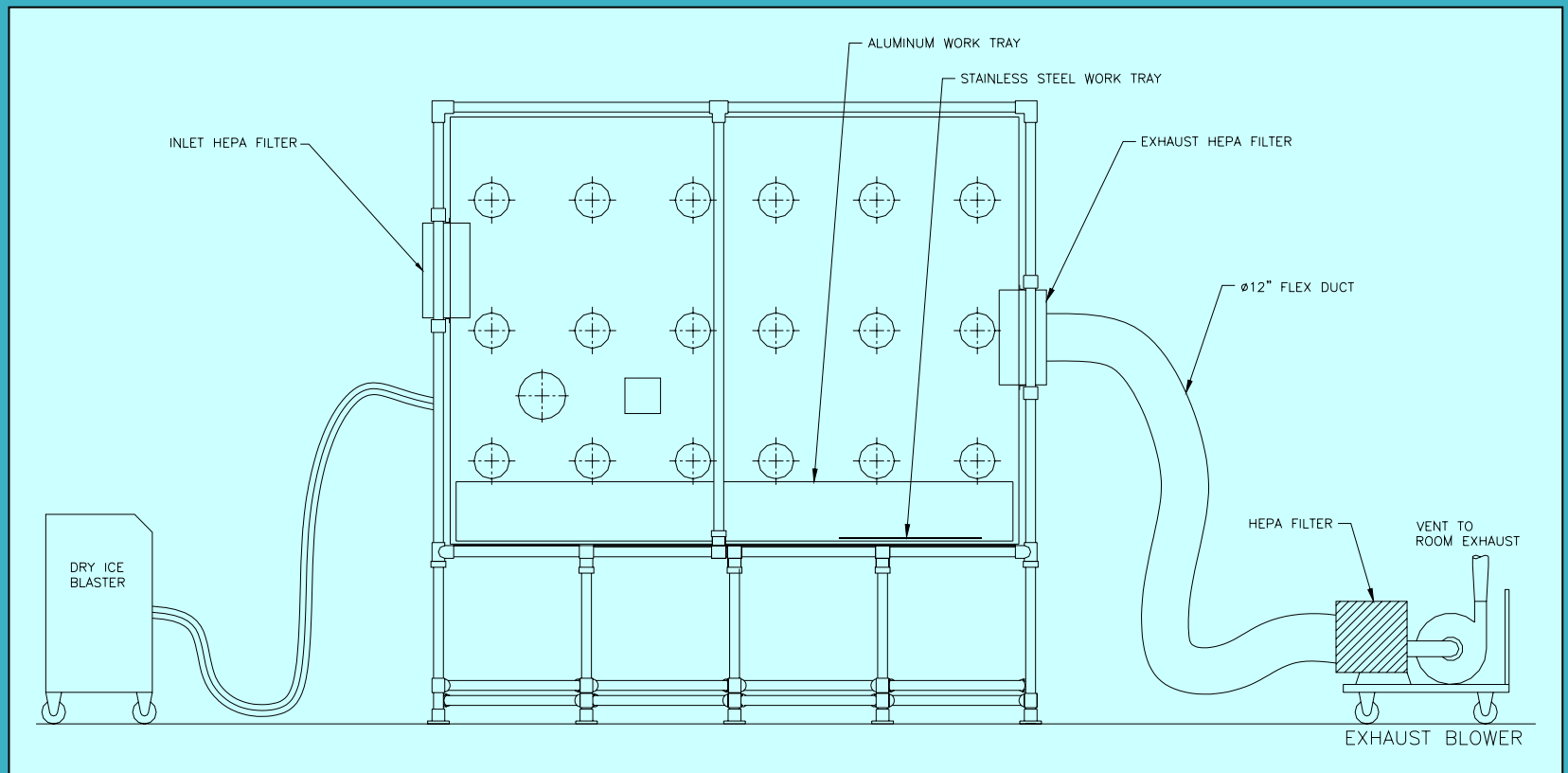
General Decontamination Procedure

- Ship from Envirocare, receive & survey
- Develop Procedure with EPRI/MRP Assistance
- Construct decontamination enclosure, cradles for CRDMs
- Install dry ice blaster, Microset applicator & other tools
- Checkout on dummy pieces of steel
- Decon four (of six) CRDMs
 - Repeated applications of Microset
 - Dry ice blasting
 - Repeated wipedowns
 - Painting to fix contamination on flame-cut surfaces
- Move to NDE test stands



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Sketch of Decontamination Enclosure





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CRDM #10 is shown being received in its shipping container.





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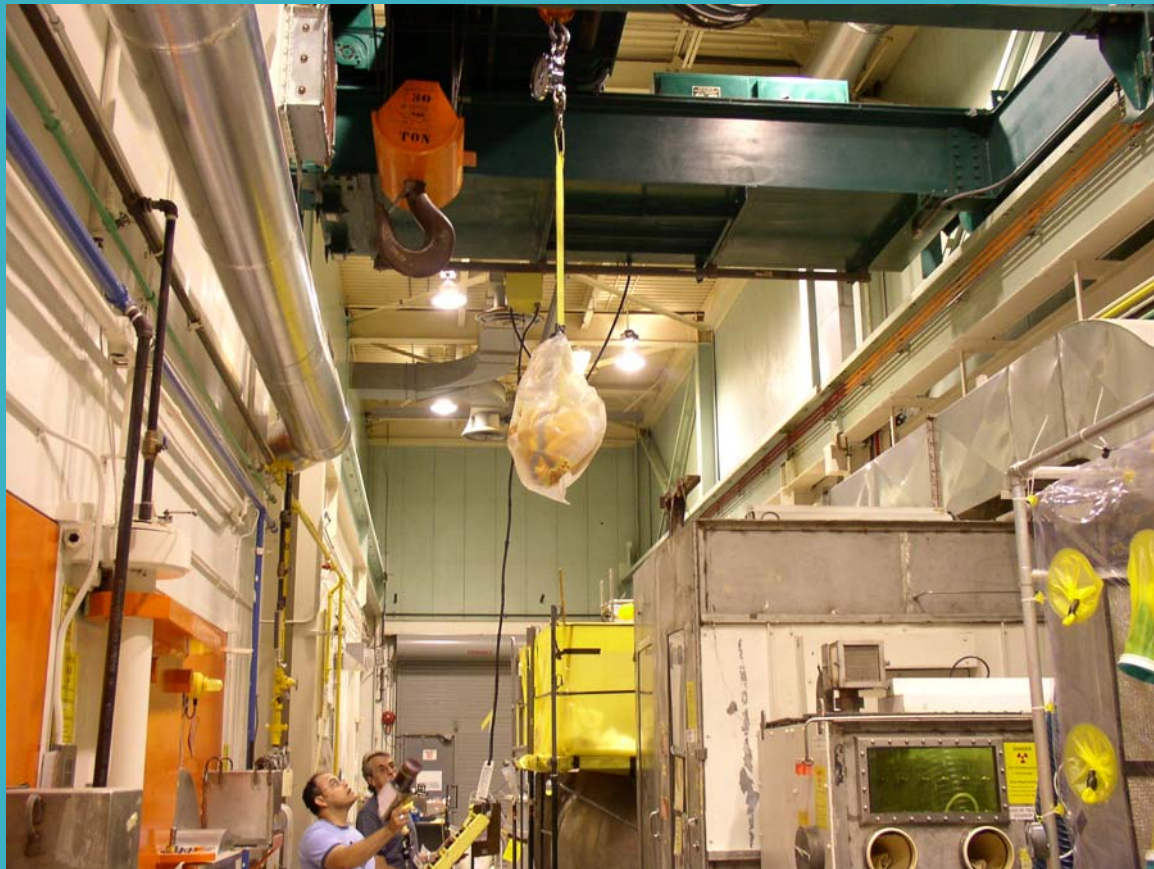
CRDM #39 being removed from its shipping container.





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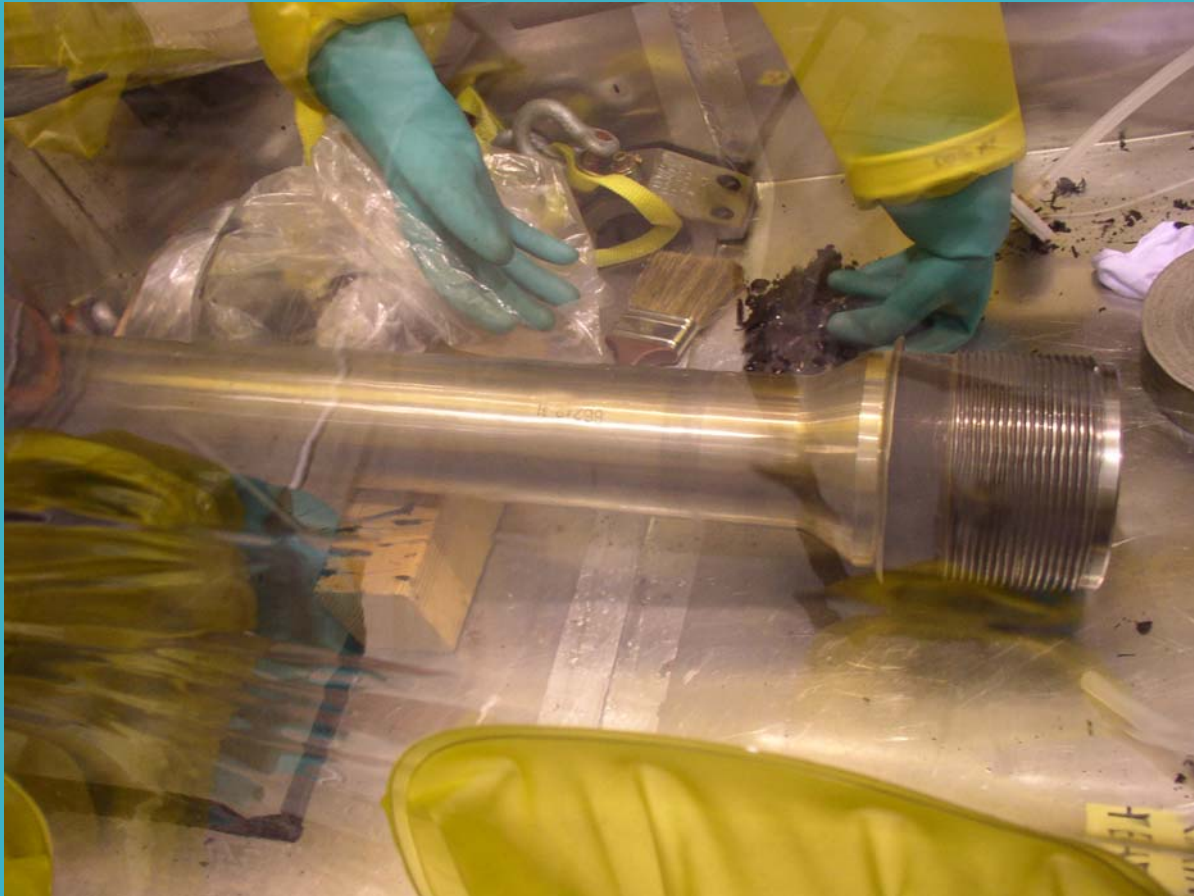
CRDM #39 being transported to the decontamination chamber.





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CRDM #31 is shown inside of the decontamination chamber.





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Wetted Surface of CRDM #59 after application and removal of the Microset molding material to the entire wetted surface.





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CRDM #10 is shown being removed from the decontamination chamber.

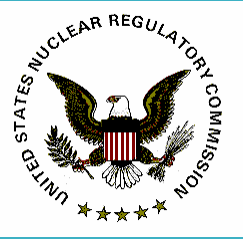




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CRDM #31 is shown being removed from the decontamination chamber and readied for transport to the NDE area. A protective paint is applied to the flame cut surface.





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Smearable Contamination Levels at Different Locations of CRDM #39

| Location | Initial Contamination (dpm/100 cm ²) | Contamination After First Microset & DI Water Brushing (dpm/100 cm ²) | Contamination After CO ₂ Blast and 2nd Microset (dpm/100 cm ²) |
|----------------------|--|---|---|
| Inside the Nozzle | 600,000 | 150,000 | 11,000 |
| Wetted, Clad Surface | 150,000 | 80,000 | 25,000 |
| J-groove weld | 200,000 | 70,000 | 18,000 |
| Dry surface | 35,000 | <5,000 | <5,000 |