ORR PROTECTION

CASE STUDY 01026



Brooklyn Cogeneration: Foam System Modernization

AFFF remediation and PFAS-free foam system conversion at a 322 MW dual-fuel cogeneration facility.

The Facility

- 322 MW capacity; currently generates approximately 286 MW
- The power plant runs on dual fuel: primary fuel powering the plant is natural gas. In the event of a natural gas shortage, the plant can also run on Distillate Fuel Oil.
- Each turbine is equipped with a heat recovery steam generator
- Commissioned in 1996

The Challenge

A cogeneration plant in Brooklyn, NY, was required by the New York City Department of Environmental Protection to upgrade fire protection systems as part of a multi-phase modernization.

Phase 1 focused on replacing a 1,000-gallon foam-water proportioning tank protecting an East River barge unloading dock and adjacent 100,000-gallon fuel storage tank. The work included legacy AFFF removal, conversion to PFAS-free foam, and deluge sprinkler riser modifications.

Execution had to coincide with the fuel tank's required 10-year internal inspection, requiring:

- **Mobilization of a fuel barge to empty the tank**
- **On-site FDNY fire watch coverage**
- **Coordination with regulatory authorities**

Any delay could cost the owner tens of thousands of dollars per day and create potential regulatory penalties.

Environmental risk was equally significant. The AFFF tank was located only yards from the East River, making any unintended PFAS release a serious regulatory and ecological concern.



ORR's Response & Solution

Despite thorough planning, the project stalled over an Environmental Indemnity clause. The ORR team developed a solution that protected both parties while preserving the project schedule.

- ORR coordinated directly with the remediation vendor to contract with the end user for the AFFF removal scope.
- The ORR proposal was revised to remove AFFF remediation from scope and clearly list it under exclusions.
- Vendor markup was eliminated, reducing overall project cost to the customer.
- ORR maintained oversight of the remaining fire protection scope under its regional Project Management team.
- ORR facilitated onboarding, safety training, and project handoff between the customer and remediation vendor.

The revised structure reduced risk exposure while maintaining continuity of execution.

Scope of Work

Phase 1 – AFFF Remediation & Tank Replacement

- Removal of existing 1,000-gallon AFFF foam-water proportioning tank
- Installation of new 1,000-gallon foam tank
- Conversion to PFAS-free firefighting foam agent
- Deluge sprinkler riser modifications
- System flushing and capture of all contaminated water
- Coordination with local FDNY and regulatory authorities
- Support during 10-year internal fuel tank inspection window

Future Phase

- 12-ton $LPCO_2$ tank replacement
- Additional modernization work anticipated

The Outcome

Despite initial setbacks and material delays, the ORR team delivered exceptional results:

- All AFFF removed and incinerated without incident.
- All flushing water was fully captured and properly disposed of.
- New foam tank delivered, installed, and commissioned successfully.
- Navigated local FDNY requirements and workforce constraints.
- Completed the project ahead of schedule.

The project demonstrated ORR's ability to balance environmental responsibility, regulatory compliance, legal risk management, and operational execution, even under high-pressure conditions.

Project Impact

When a contractual impasse threatened the schedule, ORR responded with creative problem-solving, transparent communication, and cost-conscious restructuring.
By proposing a mutually beneficial path forward, ORR preserved the client relationship and delivered a safe, compliant modernization ahead of schedule—positioning the facility for future phases.

Modernize with Confidence. Reduce Risk. Maintain Compliance.
Protect Critical Operations with ORR Protection.

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