

ERICSON

SAFETY IS OUR STANDARD



DECOMMISSIONING AND DECONTAMINATING NUCLEAR FACILITIES

Decommissioning and Decontaminating Nuclear Facilities

Today's typical nuclear plant is designed for an operating cycle of 40 to 60 years. Although this is a significant jump from the 30 year lifespan in earlier modules, modern plants still require a thorough decommission and decontamination (D&D) when the facilities have fully depreciated in usefulness. A successful D&D will either enable existing structures to be repurposed, or set the property up for demolition so an entirely new operation can be built from the ground up.

Reasons for Decommission

Since the rapid expansion of nuclear power in the 1960's, globally there are three primary reasons for decommission.

1. Continued operation is no longer justified: This is the most prevalent reason nuclear operations are discontinued. Early iterations of nuclear power have a shorter operating lifetime than current designs, which is expected for any initial versions of a new technology. Additionally, older units are not nearly as cost-effective as their improved counterparts.
2. Safety concerns: Facilities are closed after an accident or serious incident. The cost to repair existing equipment or add additional safety measurements is not always economically viable.
3. Politics or regulations challenges: Sometimes functional units are shut down for reasons outside of economic or technical justification.

Industry Trends

The Nuclear Regulatory Commission (NRC) requires that the operating license of a closed reactor be terminated and decommissioning activities be completed within 60 years. Reactors have retired from operation. The market is expected to grow at a CAGR of 12.10% from 2020-2025, partially due to the number of reactors that have reached the end of their lifecycle.

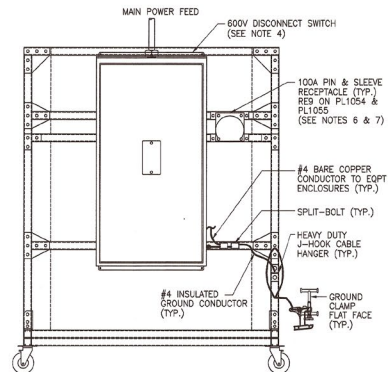
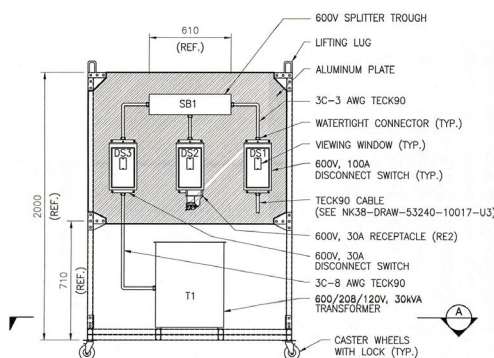
Additionally, the decreasing costs of alternative energy sources has hindered the overall growth of the nuclear industry. Producers are shifting their focus to gas-based and solar power, and even modern facilities cannot compete from an economic standpoint.

Selecting Proper Temporary Power Equipment

Equipment utilized in nuclear generation environments often weathers conditions that are more complex than a typical construction site. Most temporary power equipment is constructed to withstand normal weathering conditions encountered in outdoor service, such as wind-driven rain, dust, and debris. However, nuclear sites often require increased levels of protection, especially where the site is being dismantled or converted from nuclear to fossil fuel.

For example, when the equipment needs to be moved or serviced, it will require cleaning to remove any acquired contaminated dust,

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dirt, or liquids. The proper solutions will be able to withstand the cleaning process without degrading or compromising the components, especially the insulating materials. Be sure to select equipment with an environmental rating of NEMA 4 or 4X. The NEMA 4 rating provides equipment protection for directed high pressure water, while the NEMA 4X rating provides additional corrosion protection for cleaning agents stronger than water.

During D&D, instruments are frequently stored within the reactor containment building or structure. The primary environmental factors in this environment are elevated radiation levels and temperatures. Wiring and insulation must function in the higher operating temperatures without degrading, and framework must be steel and provide a corrosion protection via paint or plating. Confirm that the construction of the hardware is aluminum-free, including mechanical wiring lugs, receptacle housings, and conduit.



Ericson Manufacturing Solutions

Ericson is the industry leader in electrical safety products. Our power distribution units, lighting, GFCI's, wiring devices, and other related products are designed for ease of use and reliability. Our Power Transformation Units (PTU's) can survive a variety of hazardous projects, including nuclear decommissions and decontamination.

Ericson also offers innovative in-house solutions that are tailored to specific project needs. Our in-depth industry application knowledge is coupled with universal OSHA and NEC standards expertise to ensure that even the most complex, unique requirements are addressed. Our custom e-carts have proven themselves on multiple D&D endeavors, including several locations that were converted to a gas-powered facility.

Benefits

- Portable and robust
- Made in USA
- In-house UL representative able to list as required
- Decreased set up and tear down time
- Custom solutions available upon request



Sources:

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<https://www.bloomberg.com/news/articles/2019-05-17/most-profitable-job-in-nuclear-today-is-tearing-down-reactors>

https://www.researchandmarkets.com/research/r6x6lt/global_nuclear?w=4



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