

## Case Study: Nuclear Plant



There is no place where control and data acquisition are as important as in a Nuclear Power Plant. Traditional Instrumentation and Control systems had many weaknesses, among them:

- analog systems
- point-to-point wiring
- inherently fragile
- susceptible to noise
- slow due to analog to digital conversion times.

In the past there was reluctance to utilize Ethernet as a control network because commercial grade switches were too fragile and Ethernet was non-deterministic.

Today all this has changed. Switching technology makes the Ethernet deterministic. Fiber optic cable provides a medium that is immune to electrical noise. Ring topologies provide redundancy if a device fails or a cable is cut or damaged.

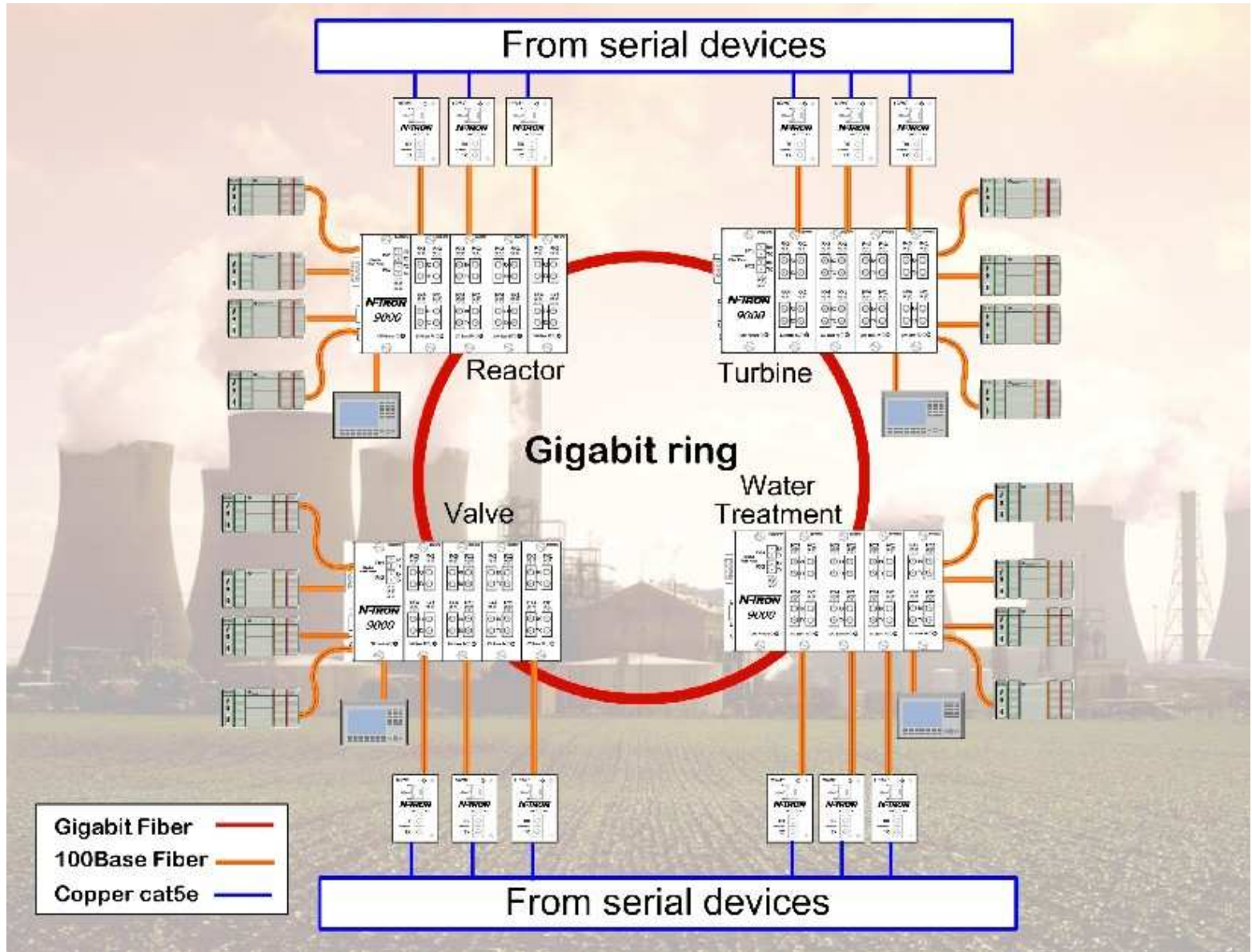
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**N-TRON Industrial Ethernet switches are ideally suited to the needs of a Nuclear Power Plant.**

- **Operating temperature ranges of up to -40°C to 85°C insure that N-TRON switches will be the “last man standing” in the network.**
  - **ESD protection on copper ports and surge protection on power inputs contribute to 1 M hour + MTBF times.**
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- **N-VIEW™ software makes it possible to monitor the status of the network and quickly identify the location of a problem, even with economical, unmanaged switches.**
  - **N-RING™ assures that in the event of a failure the ring will be reconfigured into an RSTP network in about 30 milliseconds.**
  - **Automatic IGMP snooping means that replacing a switch is simply a matter of unplugging the failed switch and plugging in a new one. No time consuming configuration is required.**
  - **Gigabit Singlemode fiber ports assure that throughput and distance requirements are met.**

# Nuclear Power Plant Topology





## Hardware installation at Nuclear Power plant

