

NTS SERVICE SPOTLIGHT

NTPQ TESTING

SERVING THE NUCLEAR POWER INDUSTRY

NTS is a leading supplier of qualified replacement parts and equipment that are no longer available from their original sources as nuclear grade. Our Nuclear Center of Excellence in Huntsville, AL has partnered with Yokogawa Corporation of America to offer services such as:

- Equipment qualification and certification for Class 1E installation
- Commercial-grade dedication per Revision 1 to EPRI NP-5652 and TR-102260
- Third-party qualification of Yokogawa DX1000N, DX2000, DX3000, and DX364 Recorders, YS1700, UT55A, and UT35A Controllers, as well as standalone MW100 Data Logger

NTS meets all requirements of 10 CFR Part 50 Appendix B, 10 CFR Part 21, and NQA-1-2008, as well as being certified for ISO 17025:2005 and ISO 9001:2008.

TPQ CERTIFICATION OF YOKOGAWA EQUIPMENT

We certify Yokogawa recorders, controllers, and service/spare parts that are classified as nuclear safety-related equipment. These items provide essential services in support of emergency reactor shutdown, containment isolation, reactor core cooling and containment, and reactor heat removal or are otherwise essential in preventing significant release of radioactive material to the environment.



Yokogawa YS1700 Programmable
Indicating Controller



Yokogawa UT55A Mid-Level
Temperature Controller



Yokogawa DX1000N
DXAdvanced Series Recorders

TPQ CERTIFICATION OF YOKOGAWA EQUIPMENT CONTINUED

Although each individual nuclear plant determines the specific safety-related functions of such equipment, we consider their safety-related functions to include:

- Able to measure, record, display, store, and retrieve data in a mild environment before, during, and after design basis events.
- Maintain structural, mechanical, and electrical integrity such that the items do not degrade or affect the safety-related circuit or functions to which they are directly connected or within their surroundings (i.e., radiated emissions).

Our Nuclear TPQ organization purchases each piece of equipment from Yokogawa as commercial-grade and then dedicates it for use as a basic component in Class 1E seismic and mild environment applications. We prepare a project-specific dedication plan that includes detailed information on the methods, procedures, and acceptance criteria used to provide reasonable assurance that the equipment can perform its intended safety function. Next we verify the critical characteristics, including its similarity to qualification test specimens. We evaluate the results of detailed inspections and functional testing against the established acceptance criteria in the dedication plan. If the results are satisfactory, NTS issues a certificate of conformance to certify that the equipment meets accepted standards for nuclear service.

SAFETY CLASSIFICATION

Safety Related

We qualify the equipment for seismic and electromagnetic interference (EMI) service conditions and validate Firmware to demonstrate the equipment is capable of performing its safety-related function(s) as required.

During the dedication process, Special Tests and Inspections are performed on the equipment to verify the following critical characteristics, as applicable, are acceptable:

- Identification Attributes: model and hardware style number, firmware version
- Physical: integrity, configuration, dimensions, weight and similarity to qualified specimen
- Performance: mechanical & electrical functional attributes (e.g., display, measure, record, control, alarms)
- Dependability: quality of design & mfg., failure modes, problem reporting, reliability

Upon successful completion of dedication activities, we issue a certificate of conformance certifying that the equipment conforms to the requirements of the customer's purchase order and is qualified for safety-related, mild environment service as documented in the applicable report(s).

Non-Safety-Related, Augmented Quality

This service level applies to those portions of structures, systems, and components (SSCs) for which continued function is not required but for which failure:

Non-Safety-Related, Augmented Quality Continued

- Could reduce the functioning of any plant feature included in NRC Regulatory Guide 1.292 (items 1.a through 1.q) to an unacceptable safety level or
- Could result in incapacitating injury to the occupants of a control room that should be designed and constructed so that the safe shutdown earthquake (SSE) would not cause such failure.

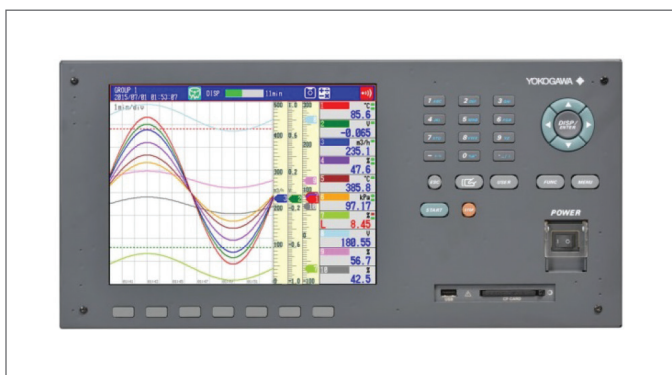
We qualify the equipment for seismic and EMI service conditions to verify its structural integrity and radiated emissions. Special Tests and Inspections are performed on the equipment to verify the following critical characteristics, as applicable, are acceptable:

- Identification attributes
- Physical attributes
- Performance: verified operational (power-up without any error messages)

Upon successful completion of special test and inspection activities, we issue a certificate of conformance certifying that the equipment conforms to the requirements of the customer's purchase order and is acceptable for use in non-safety-related, augmented quality applications as documented in the applicable report(s).

Non-Safety-Related, Commercial-Grade

- This service is intended for customers who require non-safety-related equipment from an approved vendor. NTS purchases the equipment from Yokogawa as commercial-grade, then performs a receiving inspection and ships the equipment to our customer. (No dedication activities are performed.)



Yokogawa DX3000
DXAdvanced Series Recorders

ABOUT NTS

Since opening our doors in 1961, NTS has become one of the largest commercial test laboratory networks in North America. Our test, inspection and certification services span environmental, dynamics, EMC, product safety and much more.

NTS engineers have exceptional knowledge in all test and conformity requirements in both domestic and international arenas. Our client partners in Aerospace, Defense, Telecom and Energy rely on NTS to deliver quality products to market quickly and efficiently, and so can you.



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