PWU Interrogatory #3

Interrogatory

Reference:
Exhibit D2-1-3, Page 6 of 59, Lines 17-26

Project #80123 Darlington Group II Pressure Transmitter Replacement. Hundreds of existing pressure transmitters are nearing their end of service life at Darlington Nuclear Generating Station. The transmitters are obsolete and few spares are available. The reliability of these electronic devices degrades with age. Failure rates of these components result in impairments in nuclear process and safety systems including the Moderator System, Emergency Coolant Injection, Negative Pressure Containment, Liquid Injection Shutdown System and Shutdown System 2. If failure occurs and spares are not readily available, OPG will need to take forced outages or an extended outage. The total project cost is forecast to be $47.7M. Planned final in-service is January 2028 with an in-service amount during the IR term of $29.0M.

Question

a) What is the design life of a pressure transmitter?
b) What is the average age of pressure transmitters at DNGS?
c) What is the average age of the hundreds of existing pressure transmitters that are nearing their end of service life at DNGS, described in the reference above?
d) What proportion of the existing pressure transmitters will reach their end of service life by the end of 2026?

Response

a) There is no specific design life assigned for pressure transmitters; however, since the transmitters contain age-sensitive electronic components (e.g. electrolytic capacitors, potentiometers, dip switches, semiconductor devices etc.), the typical design life is 15 ~ 20 years.

b) The average age of (Group I and Group II) pressure transmitters at DNGS is approximately 25 years. A few have been replaced over the years as part of different projects or during preventative maintenance or other maintenance activities.

c) The average age of the Group II pressure transmitters is approximately 25 years.

d) Project #80123 represents 420 pressure transmitters out of 1734 pressure transmitters in Darlington Station. All 420 pressure transmitters are expected to reach their end-of-service life by the end of 2026.