§54.3 Definitions.

Integrated plant assessment (IPA) is a licensee assessment that demonstrates that a nuclear power plant facility's structures and components requiring aging management review in accordance with §54.21(a) for license renewal have been identified and that the effects of aging on the functionality of such structures and components will be managed to maintain the CLB such that there is an acceptable level of safety during the period of extended operation.

Document Date Plant	Event	Cause
LER 2001-001-00 02/16/2001 North Anna Unit 2	Reactor shut down due to reactor coolant system leakage greater than 10 gpm	"The cause of the stem packing material failure below the lantern ring is attributed to aging."
LER 2000-006-00 11/30/2000 Seabrook	As-found set pressure for Main Steam Safety Valve determined to be outside 3% tolerance allowed by Tech Specs	"In this case, the most probable cause is component aging."
LER 2000-004-00 11/30/2000 Salem Unit 2	Two out of three Main Steam Safety Valves failed to meet Tech Spec acceptance criteria	"The apparent cause of the valves failing to meet the Technical Specifications acceptance criteria was attributed to excessive seat leakage, as indicated by steam cutting of valve disc and nozzle."

LER 2000-008 09/12/2000 Oyster Creek	Reactor shut down because Standby Gas Treatment System could not maintain negative pressure in Secondary Containment. Secondary Containment ventilation system exhaust valves were determined to be leaking.	"The cause of the degradation in Secondary Containment was age-related degradation of the automatic ventilation exhaust valve seals. This degradation was not noticed earlier because a routine maintenance program did not exist on these components."
LER 2000-005-00 05/22/2000 Kewaunee	The as-found closing time for main steam isolation valve MS-1B was found to exceed the Tech Spec maximum closing time by 20%.	"The cause of this event is believed to be excess friction associated with aging valve packing."
LER 2000-003 04/28/2000 FitzPatrick	Reactor automatic scram following manual trip of the main turbine due to loss of condenser vacuum when the recombiner bypass valve failed closed.	"The cause of the failure was embrittlement of the core assembly seat due to age, accelerated by heat from the normally energized coil."

LER 1999-001-01 04/21/2000 Watts Bar	**Both trains of electric board room chillers declared inoperable following loss of refrigerant inventory through a leaking capillary tube on a pressure gauge.**	**"The failure occurred due to a combination of aging and high frequency fatigue cycling at a stress riser in the tubing."**
LER 1999-006-01 03/27/2000 Catawba Unit 2	**Reactor automatic trip due to electrical ground within a connector on the normally energized Turbine Electrical Trip Solenoid Valve.**	**"A detailed failure analysis determined that the root cause of the connector failure was the misapplication of the connector insert insulating material which is made of neoprene. ... The neoprene insert at the failure point on the connector exhibits signs of accelerated aging. The inserts are hardened and there are charred deposits on the end of the inserts which are indications of electrical tracking."**

LER 2000-001-00 03/14/2000 Catawba Unit 1	Reactor automatic trip due to electrical ground within a connector on the normally energized Turbine Electrical Trip Solenoid Valve.	"A detailed failure analysis determined that the root cause of the connector failure was the misapplication of the connector insert insulating material which is made of neoprene. ... The neoprene insert at the failure point on the connector exhibits signs of accelerated aging. The inserts are hardened and there are charred deposits on the end of the inserts which are indications of electrical tracking."

LER 1999-010-01 **03/07/2000** **Nine Mile Point Unit 2**	**Reactor automatic scram on low reactor water level due to failure of the feedwater master controller.**	**"Specifically, the manual-tracking card failed to provide an output signal when the feedwater master controller was switched from automatic to manual mode of operation ... The manual-tracking card failed due to aging."**
LER 1999-007-01 **01/03/2000** **South Texas Unit 1**	**Train B of Control Room Makeup and Cleanup Filtration System declared inoperable following lab analysis of carbon sample**	**"This event was caused by degradation o the makeup filter and cleanup filter charcoal due to aging (i.e., the expected decline in charcoal performance attributed to the physical age of the charcoal and the consumption of background level contaminants during normal system use and testing)."**

LER 1999-003-00 **11/24/1999** **Quad Cities Unit 2**	**The Reactor Core Isolation Cooling (RCIC) system turbine tripped on overspeed during functional testing after maintenance.**	**"Subsequent investigation and analysis showed that the overspeed trip was caused by failure of the 125 vdc governor power supply resistor. ... The failure of the resister was an actual open of the coil, due to a combination of aging and a power surge."**
NRC IN 2000-14 **09/27/2000** **Diablo Canyon Unit 1**	**Reactor automatic trip following phase-to-phase fault in 12-kV bus duct from the unit auxiliary transformer to the switchboards for the reactor coolant and circulating water pumps**	**"The licensee's evaluation concluded that a center bus bar overheated at a splice joint, which caused a polyvinyl chloride boot insulator over the splice joint to smoke. Eventually, heat-induced failure of fiberglass insulation on adjacent phases resulted in phase-to-phase arcing."**

NRC IN 2000-17 10/18/2000 V. C. Summer	**Boron found on the containment floor led to discovery of 4-inch long circumferential, hairline crack in the first weld between the reactor vessel nozzle and the A loop hot leg piping about 3 feet from the reactor vessel**	**"The 2.7-inch long indication was determined to be an axial crack approximately 2.5 inches long and almost through wall which was caused by primary water stress corrosion cracking (PWSCC)."**
NRC IN 99-17 03/22/1999 Farley Unit 1	**5 of 11 fire protection sprinkler system automatic control valves failed to open during testing**	**"The licensee's root-cause team ... concluded that the diaphragm was sticking to its retainer and push rod disk, that the push rod assembly showed wear (pits and eroded plating), and that the associated solenoid valves were not properly bleeding water pressure out of the diaphragm area."**

NRC IN 99-10 **04/13/1999** **Calvert Cliffs**	**63 of the 202 vertical tendons in Unit 1's concrete containment and 64 of the 204 vertical tendons in Unit 2's concrete containment replaced due to unexpected breakage of the tendon wires**	**"BG&E's engineering evaluation indicated brittle hydrogen-induced cracking on a third of the broken wires. All of the brittle fractures were preceded by severe corrosion. The engineering evaluation also indicates that some of the brittle fractures may have occurred earlier but were not found during the periodic inspections."**