

## Palisades

South Haven MI

Date	Reactor	Event Description
19660128		<i>Plans for the reactor were announced</i>
19660603		<i>The construction permit application was submitted</i>
19670314		<i>The construction permit was issued</i>
19681105		<i>The company submitted the initial version of the Final Safety Analysis Report to the AEC.</i>
19700531		<i>Public hearings began into the plant's use of water from the lake.</i>
19710228		<i>The company reached an agreement with intervenors to build two cooling towers for closed cycle cooling operation and install an "essentially zero release" liquid radwaste system. The company estimated the cooling towers would cost \$20 million to build and \$4.5 million annually to operate while the liquid radwaste system would cost \$9 million to build and \$1.2 million annually to operate.</i>
19710324		<i>The AEC issued a provisional operating license.</i>
19710524		<i>Initial criticality of the reactor core achieved</i>
19710604		<i>The company completed zero power physics testing.</i>
19710625		<i>With the reactor in cold shutdown, low air flow through an air dryer caused temperature to rise and ignite a filter resulting in a fire.</i>
19710902		<i>One of the three 345 kilovolt transmission lines tripped. Failure of a "breaker failure relay" for the tripped transmission line tripped the other two breakers on the switchyard's ring bus, causing a loss of offsite power. Emergency diesel generator No. 1 automatically started and connected to its safety-related electrical bus. Emergency diesel generator No. 2 automatically started but did not connect to its safety-related electrical bus. An operator adjusted the synchroscope to manually close the operator breaker and connect the EDG to its bus.</i>

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19710916		<i>With the reactor in hot shut down, a technician de-energized the reactor protection system (RPS). The loss of power to the electromatic relief valve pilot valve solenoids opened the valves (I.e., the electromatic relief valves failed open on loss of power). One of the electromatic relief valve had its isolation valve closed. Reactor coolant system water flowed through the opened, unisolated electromatic relief valve to the quench tank. Both channels of safety injection (SI) initiated, but the operator blocked channel A. The operator closed the isolation valve for the opened electromatic relief valve and started another charging pump to makeup water to the reactor coolant system. In about two minutes, the reactor coolant system pressure had dropped to about 1,280 pounds per square inch. When the RPS electrical breakers were reclosed, power to the electromatic relief valve solenoids was restored and the valves closed.</i>
19711231		<i>Unit placed into commerical operation</i>
19711231		<i>Shortly after the plant was declared commerical, the operators manually tripped the reactor due to high pressure safety injection (HPSI) valve problems.</i>
19711231		<i>Reactor output connected to the electrical grid for the first time to begin operating cycle 1.</i>
19720111		<i>The reactor automatically tripped from 15 percent power after a feedwater pump trip caused low water level in the steam generator. Plugged condensate pump strainers led to the feedwater pump trip.</i>
19720111		<i>The operators restarted the reactor from a forced outage that began on December 31, 1971.</i>
19720112		<i>The reactor automatically tripped from 20 percent power due to spurious relay operation</i>
19720113		<i>The reactor automatically tripped from 20 percent power due to spurious relay operation</i>
19720113		<i>The reactor automatically tripped from 20 percent power after a feedwater pump trip caused low water level in the steam generator. Plugged condensate pump strainers led to the feedwater pump trip.</i>
19720203		<i>The reactor automatically tripped from 20 percent power when a malfunction of the feedwater regulating valve caused low water level in the steam generator</i>
19720305		<i>The reactor automatically tripped during a planned loss of offsite power test</i>
19720311		<i>The reactor was manually tripped from 20 percent power for a turbine coastdown test</i>

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19720312		<i>The operators manually tripped the reactor after the automatic trip failed upon opening of the 345 kilovolt generator output breakers. Workers traced the problem to a faulty pilot wire circuit.</i>
19720327		<i>The reactor tripped from 60 percent power after a feedwater pump tripped (caused by air in its oil system following an improper filter change) and resulted in low water level in the steam generator</i>
19720404		<i>The reactor tripped from 60 percent power during a turbine trip test</i>
19720414		<i>The reactor tripped from 10 percent power on loss of condenser vacuum when a waterbox was opened for maintenance and the 15 percent bypass failed</i>
19720414		<i>The reactor tripped from 15 percent power when the feedwater bypass valve malfunctioned and resulted in a low water level in the steam generator</i>
19720415		<i>The reactor tripped from 15 percent power when a lightning strike caused switchyard relays to actuate</i>
19720420		<i>The reactor tripped from 60 percent power following a generator trip test</i>
19720422		<i>The reactor tripped from 15 percent power during a power ascension test program test</i>
19720423		<i>The reactor was shut down for modification of the charging system discharge piping to correct vibration induced pipe cracking.</i>
19720517		<i>With the reactor in hot shut down, the safety injection (SI) system test button was pushed to initiate a quarterly surveillance test. This resulted in the spurious operation of a differential relay on the 1-2 startup transformer, causing a loss of offsite power. The relay actuation occurred due to unbalanced sensing current from a current transformer. The differential relays were removed from the startup transformers and replaced with instantaneous overcurrent relays.</i>
19720603		<i>The reactor tripped from 10 percent power</i>
19720622		<i>The reactor tripped from 30 percent power after a feedwater pump tripped on low suction pressure</i>
19720706		<i>The reactor tripped from 10 percent power due to a feedwater pump controller malfunction</i>
19720731		<i>The reactor tripped from 18 percent power due to low water level in a steam generator following a feedwater pump trip on high vibration</i>

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19721209		<i>The reactor tripped from 20 percent power due to low water level in a steam generator following inadvertent closure of the feedwater regulating valve</i>
19721211		<i>The reactor tripped due to turbine / reactor power mismatch</i>
19721218		<i>Radioactive gas was released from the volume control tank to the atmosphere without prior monitoring / sampling.</i>
19721221		<i>The reactor tripped from 82 percent power due to low water level in a steam generator following inadvertent closure of a feedwater valve</i>
19730116		<i>The reactor was shut down because of tube leakage in steam generator A.</i>
19730306		<i>The reactor tripped from 80 percent power due to a faulty load limiter in the turbine control system</i>
19730306		<i>The unit was connected to the electrical grid following a forced outage to repair leaking steam generator tubes.</i>
19730319		<i>The reactor tripped due to spurious indication of high pressure</i>
19730416		<i>The reactor automatically tripped from 100 percent power following a turbine trip</i>
19730518		<i>The reactor tripped from 100 percent power during a generator trip test</i>
19730708		<i>The reactor tripped from 88 percent power when a turbine trip occurred during turbine valve testing</i>
19730722		<i>The reactor tripped on high power due to a fault in the nuclear instrumentation channel</i>
19730810		<i>The limit on the rate that radioactively contaminated wastes can be released to the environment was exceeded.</i>
19730811		<i>The limit on the rate that radioactively contaminated wastes can be released to the environment was exceeded.</i>
19730811		<i>The reactor was shut down for steam generator tube repairs. Workers found that core internal vibration during operation had damaged steam generator tubes.</i>
19731002		<i>The spent fuel pool overflowed. The water overflowing the spent fuel pool flooding the floor of the auxiliary building to a depth of 3 inches.</i>

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19731006		<i>Workers removed the reactor vessel head to inspect the reactor internals. Rising noise levels on the ex-core neutron flux detectors prompted the inspection. Workers discovered that the core support barrel had moved relative to its alignment keys. The movement increased the amount of water between the core and the flux detectors, causing the anomalous flux indications. The movement of the reactor vessel internals was attributed to a relaxation of the preloading on the vessel head studs and the mating surface between the reactor vessel and the vessel head. Normal primary coolant flow caused the core barrel to move. The movement caused observable wear and broken fasteners.</i>
19740505		<i>With the reactor in cold shut down, the operators began increasing the primary system pressure in order to place a reactor coolant pump in service. As primary system pressure reached about 200 pounds per square inch, the operators detected a primary-to-secondary steam generator tube leak of 10 to 42 gallons per minute. A tube with a through-wall leak was identified and plugged.</i>
19740906		<i>While rolling the main turbine during reactor startup, turbine blades were damaged by feedwater heater leakage.</i>
19741001		<i>The unit was connected to the electrical grid to end a year-plus outage.</i>
19741002		<i>The reactor automatically scrammed as planned during a turbine overspeed trip test.</i>
19741007		<i>The reactor tripped from 15 percent power following a reverse power trip of the turbine</i>
19741017		<i>With the reactor in hot shut down, the safety injection (SI) system test button was pushed to initiate a quarterly surveillance test. This resulted in the spurious operation of a differential relay causing a loss of offsite power. The emergency diesel generators automatically started and connected to their electrical buses.</i>
19741017		<i>The operators manually shut down the reactor for maintenance to repair a control rod drive mechanism seal, leaking condenser tubes, and a fitting leak on a seal leak-off line.</i>
19741101		<i>The operators manually shut down the reactor for maintenance to repair condenser tube leaks.</i>
19741205		<i>Radioactively contaminated water was released from the laundry system without prior monitoring / sampling.</i>
19750401		<i>Approximately 288 gallons of radioactively contaminated water were released from the liquid radwaste system without prior monitoring / sampling.</i>

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19750406		<i>The operators manually shut down the reactor to repair a leaking feedwater heater valve.</i>
19750422		<i>The reactor tripped from 85 percent power when a loose fitting in the electrohydraulic control system for the turbine caused a false loss of load signal</i>
19750422		<i>The reactor automatically tripped due to a turbine electro-hydraulic control (EHC) oil line failure.</i>
19750620		<i>The operators manually shut down the reactor to repair a control rod drive mechanism seal leak.</i>
19750630		<i>The operators manually tripped the reactor after a feedwater pump tripped.</i>
19750722		<i>Radwaste batch 75-021R was authorized for a release rate of up to 70 gallons per minute. The operators set the flow controller for a discharge rate of 40 gallons per minute. When the operator checked back 45 minutes later, the tank was empty. Calculations indicated the actual release rate was 102.2 gallons per minute, exceeding the authorized rate.</i>
19750725		<i>The operators manually shut down the reactor to repair a control rod drive motor.</i>
19750727		<i>The operators manually shut down the reactor after two control rod drive mechanisms (CRDMs) became inoperable. CRDM 27 had been declared inoperable due to a dragging brake. During testing on July 27th, CRDM 33 was inserted but could not be withdrawn due to borated contacts.</i>
19750812		<i>The operators manually shut down the reactor to repair a control rod drive mechanism seal leak.</i>
19750817		<i>The operators manually shut down the reactor to repair a control rod drive mechanism seal leak. Control rod 19 dropped into the reactor core.</i>
19750828		<i>The limit on the rate that radioactively contaminated wastes can be released to the environment was exceeded.</i>
19750830		<i>The operators manually shut down the reactor to repair a control rod drive mechanism seal leak.</i>
19750906		<i>The operators manually shut down the reactor to repair a control rod drive mechanism seal leak. Control rod 16 dropped into the reactor core.</i>
19751028		<i>The operators manually shut down the reactor to repair main generator hydrogen coolers.</i>

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19751220		<i>The reactor automatically tripped as operators were manually shutting down for a refueling outage.</i>
19751220		<i>The reactor was shut down to end operating cycle</i>
19760210		<i>The company notified the NRC that steam generator tube inspections identified another 706 tubes that must be plugged. Previous inspections resulted in the plugging of 2,964 tubes out of the 14,074 tubes in the two steam generators.</i>
19760401		<i>Radioactive gas was released from the volume control tank to the atmosphere without prior monitoring / sampling.</i>
19760506		<i>The reactor began operating cycle 2. During the refueling outage, the entire first batch of fuel assemblies were discharged because of unacceptable axial growth of poison rods.</i>
19760510		<i>The reactor automatically tripped after a feedwater pump tripped.</i>
19760512		<i>The operators manually shut down the reactor to repair control rod drive mechanism seal leakage.</i>
19760720		<i>The reactor automatically tripped due to a transmission line fault during a thunderstorm.</i>
19760823		<i>The reactor automatically tripped on low condenser vacuum during a condenser leak test due to an improper alignment of the air ejector.</i>
19760825		<i>The reactor automatically tripped during startup on low water level in a steam generator.</i>
19760831		<i>The reactor automatically tripped when an instrument air dryer valve failure caused loss of control air to the main steam isolation valves (MSIVs).</i>
19760919		<i>The reactor was shut down to repair a condenser tube leak.</i>
19760928		<i>The reactor was shut down to repair a condenser tube leak.</i>
19761020		<i>The operators shut down the reactor to repair a leak in the regenerative heat exchanger in the chemical and volume control system (CVCS).</i>
19761112		<i>The reactor was shut down to repair control rod drive mechanism seal leakage.</i>
19761124		<i>The reactor automatically tripped due to generator voltage regulator problems.</i>

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19761125		<i>The reactor automatically tripped due to generator voltage regulator problems.</i>
19761201		<i>The reactor automatically tripped due to generator voltage regulator problems.</i>
19770111		<i>The operators manually tripped the reactor after a cooling tower pump tripped.</i>
19770117		<i>The operators manually tripped the reactor after the moisture separator drain tank dump valve failed open.</i>
19770117		<i>The reactor automatically tripped during startup when a feedwater pump tripped.</i>
19770325		<i>The reactor automatically tripped when a feedwater pump tripped.</i>
19770327		<i>The reactor automatically tripped during startup when a feedwater pump tripped.</i>
19770407		<i>The reactor was shut down to repair the drain valve in a high pressure feedwater heater. Workers found the valve to be functioning properly. The problem was traced to a leaking tube in the heater that was causing the high water level indication. The feedwater heater was bypassed when the reactor restarted.</i>
19770515		<i>The operators manually shut down the reactor to repair control rod drive mechanism seals and stake the main condenser tubes.</i>
19770730		<i>The operators manually shut down the reactor due to low oil level for a reactor coolant pump.</i>
19770816		<i>The operators manually shut down the reactor to repair a containment purge exhaust isolation valve.</i>
19770924		<i>The reactor automatically tripped from 100 percent power when offsite power was lost during an electrical storm. Both emergency diesel generators automatically started and connected to their electrical buses.</i>
19770924		<i>The reactor automatically tripped after a lightning strike caused the cooling tower pumps to trip.</i>
19771101		<i>The NRC approved an increase in the licensed power level from 2,200 Mwt to 2,530 Mwt.</i>

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19771125		<i>The operators manually tripped the reactor when switchyard bus B de-energized, causing the circulating water pumps to trip on loss of voltage. The switchyard problem and generator trip resulted in a loss of offsite power. Both emergency diesel generators automatically started and connected to their safety-related electrical buses.</i>
19771125		<i>The operators manually tripped the reactor after a partial loss of offsite power.</i>
19771127		<i>The reactor automatically tripped during startup when a feedwater pump tripped.</i>
19771211		<i>The operators manually tripped the reactor when switchyard bus B de-energized due to a spurious signal from the bus stripping relay, causing the circulating water pumps to trip on loss of voltage. The switchyard problem and generator trip resulted in a loss of offsite power. Both emergency diesel generators automatically started and connected to their safety-related electrical buses.</i>
19771211		<i>The operators manually tripped the reactor after a partial loss of offsite power.</i>
19780106		<i>The operators manually shut down the reactor for refueling.</i>
19780420		<i>The reactor began operating cycle</i>
19780421		<i>The reactor automatically tripped after a feedwater pump tripped.</i>
19780501		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>
19780511		<i>The reactor automatically tripped on low water level in a steam generator.</i>
19780520		<i>The reactor automatically tripped on low water level in a steam generator. Inadvertent closure of one main steam isolation valve caused shrinkage of the steam generator water level.</i>
19780522		<i>The reactor automatically tripped after two main steam isolation valves (MSIVs) closed.</i>
19780523		<i>The reactor automatically tripped after an electrical bus lost its primary supply and failed to transfer to its alternate source.</i>

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19780606		<i>The operators manually shut down the reactor to replace an inoperable control rod drive. During testing, control rod 3 could not be moved. During the manual shut down, operators manually tripped the control rod and it fully inserted into the reactor core. Workers determined that the control rod's failure to move was caused by a setscrew backing out of position in the brake assembly.</i>
19780607		<i>The reactor automatically tripped on low water level in a steam generator.</i>
19780608		<i>The reactor automatically tripped on low water level in a steam generator.</i>
19780611		<i>The reactor automatically tripped after a main steam isolation valve (MSIV) closed due to low air supply to its valve operator.</i>
19780613		<i>The reactor automatically tripped on low water level in a steam generator.</i>
19780618		<i>The reactor automatically tripped following a lightning strike.</i>
19780628		<i>The operators manually shut down the reactor due to excessive control rod drive mechanism seal leakage.</i>
19780708		<i>The operators manually shut down the reactor for repairs to a control rod drive mechanism cooling fan.</i>
19780709		<i>The reactor automatically tripped when the steam jet air ejector steam supply valve failed resulting in loss of condenser vacuum.</i>
19780731		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>
19780807		<i>The reactor automatically tripped after a feedwater pump tripped.</i>
19780828		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>
19780913		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>
19780922		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>
19781002		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>

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19781010		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>
19781017		<i>The reactor automatically tripped after a feedwater pump tripped.</i>
19781129		<i>The operators manually shut down the reactor to repair leaking control rod drive mechanism seals.</i>
19781210		<i>The operators manually shut down the reactor to balance the turbine.</i>
19781211		<i>The operators manually shut down the reactor due to excessive oil in the main generator.</i>
19781216		<i>The reactor automatically tripped after a feedwater pump tripped.</i>
19790128		<i>The operators manually tripped the reactor when a feedwater regulating valve failed open.</i>
19790201		<i>The reactor automatically tripped when an operator accidentally tripped a reactor coolant pump.</i>
19790303		<i>The reactor automatically tripped when a control valve failure tripped a feedwater pump.</i>
19790404		<i>A fire occurred when a test lead being used to measure battery voltage ignited hydrogen that collected inside the battery.</i>
19790407		<i>The reactor automatically tripped on low water level in a steam generator after a feedwater pump tripped.</i>
19790425		<i>The reactor automatically tripped due to loss of generator load caused by voltage regulator malfunction.</i>
19790430		<i>The reactor automatically tripped due to loss of generator load caused by voltage regulator malfunction.</i>
19790609		<i>Workers transferred secondary system spent powdered resins to an outside storage bin without monitoring. A rain storm caused the storage bin to overflow with radioactively contaminated water and resins washed into a storm drain and flowing into Lake Michigan.</i>
19790609		<i>The reactor was shut down to repair condenser tube leaks.</i>
19790616		<i>The operators manually tripped the reactor to repair condenser tube leaks.</i>

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19790810		<i>The operators manually tripped the reactor when a feedwater pump tripped during turbine valve testing.</i>
19790824		<i>The operators manually tripped the reactor when feedwater flow was lost while placing a condensate demineralizer unit in service.</i>
19790908		<i>Radioactive gas was released from the volume control tank to the atmosphere without prior monitoring / sampling.</i>
19790908		<i>The operators manually shut down the reactor for refueling.</i>
19790914		<i>The company informed the NRC that workers preparing to perform a Type C local leak rate test of containment isolation valves found two manual valves in a 3-inch bypass line around the 48-inch diameter containment purge line being locked open instead of locked closed. These valves may have been open since April 1978 when an efficiency test of the bypass line filters was conducted.</i>
19791109		<i>The NRC issued an Order requiring, among other things, system walkdowns to verify configuration management.</i>
19791109		<i>The NRC proposed a \$450,000 civil penalty for defective procedures that resulted in the containment being degraded for a long period.</i>
19791228		<i>The NRC reported that cracks had been identified in the low pressure turbine.</i>
19800516		<i>The NRC reported that inspections conducted as part of the Systematic Evaluation Program found deficiencies in the anchorage and support of safety-related electrical equipment, with the result that seismic design margins were inadequate.</i>
19800524		<i>The reactor began operating cycle 4</i>
19800702		<i>The reactor was shut down for 205 hours to repair a seal oil leak on the generator.</i>
19800731		<i>The NRC reported that the company replaced mercury-wetted matrix relays used in the reactor protection system with dry contact relays after repetitive failures.</i>
19800731		<i>The NRC issued an Immediate Action Letter requiring the company to take specific steps to correct problems that resulted in repetitive misalignment of containment sump valve CV-303 between July 25 and Jul 27, 1980.</i>
19800815		<i>The NRC issued an Immediate Action Letter requiring the company to take specific steps to complete NUREG-0578 items on radiation monitoring instrumentation and procedures.</i>

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19800826		<i>The NRC issued an Immediate Action Letter requiring the company to take specific steps to ensure auxiliary feedwater pump operability and steam generator feedwater control prior to exceeding 55 percent power after restart.</i>
19800826		<i>The reactor was shut down to repair control rod drive seal leakage.</i>
19800901		<i>The reactor restarted from a 1 week outage.</i>
19800913		<i>A fork lift transporting a canister of radioactive waste hit a pot hole. About two gallons of radioactively containment liquid spilled from the canister when it slipped from the forks. Workers removed the contaminated soil and placed it in waste barrels for disposal.</i>
19800916		<i>The NRC proposed a \$16,000 civil penalty for personnel errors that resulted in improper positioning of safety-related valves in the containment sump that disabled one train of a safety system.</i>
19800928		<i>The operators shut down the reactor to repair an electrical short in the turbine control system. The outage lasted 16.8 hours.</i>
19801008		<i>The Bechtel Power Corporation informed the NRC of generic deficiencies in pipe support sway struts furnished by Corner &amp; Lada to the Midland and Palisades plants. The clamp end of the sway strut could loosen and disengage from the bushing, creating a large gap in the support system not accounted for in the original safety analyses.</i>
19801009		<i>The reactor automatically tripped due to severed cables in the switchyard. The outage lasted 27.3 hours.</i>
19801031		<i>The reactor was shut down due to severe turbine vibration. The outage lasted 1,004.6 hours.</i>
19801214		<i>The reactor restarted from a 6 week outage.</i>
19810106		<i>Following monthly surveillance testing, the breakers connecting the station batteries to their 125-volt dc electrical buses were mistakenly left open for about an hour. The reactor was operating at 99 percent power. Had a loss of offsite power occurred while the station battery breakers were open, the loss of control power would have produced a station blackout.</i>
19810115		<i>The operators manually shut down the reactor due to power supply failure for the steam generator level controller.</i>

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19810116		<i>The unit was connected to the electrical grid to end a 28.1 hour forced outage.</i>
19810124		<i>A fire occurred when the motor of a component cooling water pump ignited due to bearing failure following loss of lubricating oil.</i>
19810309		<i>The NRC issued a Confirmatory Order related to an event where both safety-related battery banks were disconnected for one hour during reactor operation.</i>
19810630		<i>The NRC and the company agreed on a \$225,000 civil penalty. The company had contested the \$450,000 civil penalty proposed by the NRC on November 9, 1979.</i>
19810711		<i>The operators manually shut down the reactor to repair a seal failure on a reactor coolant pump.</i>
19810809		<i>The unit was connected to the electrical grid to end a 706 hour forced outage.</i>
19810810		<i>The reactor automatically tripped when a contact shorted during maintenance.</i>
19810810		<i>The unit was connected to the electrical grid to end a 18 hour forced outage.</i>
19810829		<i>The reactor shut down to end operating cycle 4</i>
19811003		<i>A contractor discovered a safety-related electrical cable had its insulation cut and about half of the individual wires severed.</i>
19811116		<i>The unit was connected to the electrical grid to begin operating cycle</i>
19811206		<i>Approximately 500,000 gallons of water overflowed cooling tower A and flooded portions of the turbine building and south radwaste building to a depth of about one foot.</i>
19811231		<i>The reactor automatically tripped due to turbine control problems.</i>
19820102		<i>The reactor automatically tripped during startup due to turbine control system problems.</i>
19820102		<i>The unit was connected to the electrical grid to end a 30.1 hour forced outage.</i>
19820103		<i>The reactor automatically tripped during startup due to loss of condenser vacuum.</i>
19820103		<i>The unit was connected to the electrical grid to end a 29.8 hour forced outage.</i>
19820104		<i>The unit was connected to the electrical grid to end a 33 hour forced outage.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
19820106		<i>A reactor trip was complicated by the automatic start of the auxiliary feedwater system being inoperable.</i>
19820124		<i>The reactor was shut down due to steam generator water chemistry problems.</i>
19820130		<i>The operators tripped the reactor during startup when the feedwater turbine throttle and trip valve would not open fully.</i>
19820130		<i>The unit was connected to the electrical grid to end a 148 hour forced outage.</i>
19820131		<i>The unit was connected to the electrical grid to end a 10.9 hour forced outage.</i>
19820204		<i>The reactor automatically tripped after the cooling tower pump within the circulating water system tripped.</i>
19820304		<i>The unit was connected to the electrical grid to end a 677.3 hour forced outage.</i>
19820309		<i>The operators manually tripped the reactor due to turbine electro-hydraulic control system problems.</i>
19820310		<i>The unit was connected to the electrical grid to end a 10.9 hour forced outage.</i>
19820312		<i>The operators manually tripped the reactor due to a fire in the isophase bus.</i>
19820317		<i>The unit was connected to the electrical grid to end a 129.7 hour forced outage.</i>
19820323		<i>The operators manually shut down the reactor due to steam generator tube leakage.</i>
19820410		<i>The unit was connected to the electrical grid to end a 1141 hour forced outage.</i>
19820512		<i>The NRC proposed a \$16,000 civil penalty for a violation related to failure to follow written procedures that caused containment integrity to be lost.</i>
19820512		<i>The reactor automatically tripped due to failure of turbine bearing No. 9.</i>
19820526		<i>The unit was connected to the electrical grid to end a 349.7 hour forced outage.</i>
19820612		<i>The operators manually shut down the reactor due to low oil level for the primary coolant pump.</i>
19820614		<i>The operators took the generator offline for 21 hours because of a turbine auto stop oil relief valve problem. The reactor remained critical.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
19820614		<i>The unit was connected to the electrical grid to end a 40.4 hour forced outage.</i>
19820711		<i>The operators manually tripped the reactor after a cooling tower pump within the circulating water system had a bearing failure.</i>
19820903		<i>The unit was connected to the electrical grid to end a 1273 hour forced outage.</i>
19820904		<i>The reactor automatically tripped when the operating turbine electro-hydraulic control system pump was inadvertently valved out.</i>
19820904		<i>The unit was connected to the electrical grid to end a 9.2 hour forced outage.</i>
19821016		<i>The reactor automatically tripped due to a failed steam generator water level instrument.</i>
19821017		<i>The unit was connected to the electrical grid to end a 26.3 hour forced outage.</i>
19821028		<i>The operators manually shut down the reactor due to low suction pressure to a feedwater pump.</i>
19821029		<i>The unit was connected to the electrical grid to end a 31.6 hour forced outage.</i>
19830430		<i>The reactor automatically tripped when a feedwater pump tripped.</i>
19830812		<i>The reactor was shut down to enter refueling outage</i>
19840106		<i>While sluicing resin from tank T-104 to an unused resin bin, workers discovered that the plug was missing from the storm drain and that resin was spilling onto the ground. About 10 gallons spilled and may have entered the storm drain.</i>
19840108		<i>The reactor had been shut down for over 4 months. Workers de-energized an offsite power line in order to permit maintenance on an electrical breaker. One emergency diesel generator was out of service for maintenance. The loss of the offsite power line caused the other emergency diesel generator to start. The operators had approved maintenance on the service water pump for the operable emergency diesel generator. The emergency diesel generator started and ran for about 50 minutes without cooling water before overheating. The operators tripped the emergency diesel generator and restored the offsite power line about 3 minutes later.</i>
19840318		<i>A diver working on the fuel transfer tilt machine (upender) in the refueling cavity was overexposed. Placing his knee into sludge on the cavity floor exposed his thigh to 4.5 rem.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
19840719		<i>With the reactor at hot shut down, technicians calibrating pressure switches inadvertently activated containment spray. Between 1,000 and 2,000 gallons of borated water sprayed into containment.</i>
19840730		<i>The unit was connected to the electrical grid to begin operating cycle</i>
19840810		<i>The reactor was shut down when a crack was discovered on a socket weld on a primary coolant system instrument line.</i>
19840904		<i>The unit restarted from a 604 hour outage.</i>
19840908		<i>The reactor was shut down to repair an auxiliary feedwater pump.</i>
19840914		<i>The unit restarted from a 132.7 hour outage.</i>
19840916		<i>The reactor was shut down when reactor cavity pressures indicated the first and second seals of a reactor coolant pump had failed. About 90 minutes later, the third seal failed and pump vibration levels reached the danger level. Workers found major damage to the pump.</i>
19841121		<i>The unit restarted from a 9 week outage.</i>
19850731		<i>About 350,000 gallons of water overflowed cooling tower A due to a computer control panel failure. The south radwaste building was flooded to a depth of about 1 1/2 feet.</i>
19850811		<i>The reactor tripped due to problems with the generator voltage control circuit.</i>
19850928		<i>The unit restarted from a 3 week outage.</i>
19851015		<i>The reactor was shut down to repair a packing leak on a primary system motor operated valve.</i>
19851130		<i>The reactor was shut down to enter refueling outage</i>
19851202		<i>Workers noted that wave action had eroded sand beneath a security fence at the beach. The erosion created a 3-foot high vertical space. A front end loader being used to backfill the hole slipped down the sloping beach and flattened about 50 feet of fence. Two security guards were posted along the fenceline until the fence could be repaired.</i>
19860303		<i>The unit was connected to the electrical grid to begin operating cycle</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
19860308		<i>The reactor was shut down repair reactor coolant pump seals and valves in the chemical and volume control system.</i>
19860316		<i>The unit restarted from a 1 week outage.</i>
19860410		<i>The reactor was shut down to repair a letdown relief valve.</i>
19860413		<i>The operators reduced the reactor power level to 50 percent to replace a condensate pump.</i>
19860413		<i>The unit restarted from a 71.8 hour outage.</i>
19860423		<i>The operators returned the reactor power level to 100 percent following replacement of a condensate pump.</i>
19860519		<i>The reactor tripped due to loss of electro-hydraulic control system power. Workers determined that the EHC power supplies were sensitive to ac line noise and that they failed during the power supply cabinet cooling fan and filter cleaning.</i>
19860521		<i>The reactor was shut down until an NRC investigation and review of corrective actions was completed. The findings of maintenance problems and poor surveillance testing kept the unit down the remainder of the year.</i>
19861217		<i>Workers identified cracking of the control rod drive seal housings. The damage was attributed to a contaminant that caused transgranular stress corrosion cracking.</i>
19870403		<i>The unit restarted from a 6,257.1 hour outage (May 19, 1986).</i>
19870412		<i>The operators manually tripped the reactor from 75 percent power in response to a failure of the electro-hydraulic control system that caused the turbine governor valves to begin closing. Workers determined that a tooth broke off the EHC fluid pump caused excessive vibration that cracked a discharge line allowing system pressure to drop.</i>
19870417		<i>The unit restarted from a 129.4 hour outage.</i>
19870421		<i>The operators increased the reactor power level to 100 percent for the first time since May 1986.</i>
19870516		<i>The reactor was shut down after a pressurizer spray valve stuck partially open.</i>
19870520		<i>The unit restarted from a 4 day outage.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
19870522		<i>The operators manually tripped the reactor from 35 percent power after an auxiliary operator inadvertently closed feedwater pump turbine drive exhaust valve MV-159FW during realignment of the moisture separator reheater drain lines to the main condenser. The valve's closure caused the turbine driver's overpressure protection rupture disc to open, allowing steam to be expelled which activated the local fire protection system.</i>
19870620		<i>The reactor was shut down due to a leak on an electro-hydraulic control system supply line to a turbine governor valve.</i>
19870625		<i>The unit restarted from a 120 hour outage.</i>
19870709		<i>Plant workers were honored for having working 3 million hours without a lost time injury.</i>
19870710		<i>The operators manually tripped the reactor from 14 percent power due to oil leaking from the upper reservoir of primary coolant pump P-50D.</i>
19870713		<i>The unit restarted from a 76.2 hour outage.</i>
19870714		<i>Loss of offsite power lasting 388 minutes</i>
19870714		<i>The operators manually tripped the reactor from 91 percent power when a transformer problem caused a partial loss of station power that stopped cooling tower flow to the main condenser. Workers troubleshooting a problem on the deluge system for the main transformer inadvertently actuated it. The water caused a flashover from the Y phase insulator bushing cap to the transformer case of the 1-2 startup transformer.</i>
19870714		<i>The reactor was shut down when a transformer fault caused a loss of offsite power.</i>
19870726		<i>The unit restarted from a 2 week outage.</i>
19870817		<i>The operators manually tripped the reactor from 68 percent power in response to failure of an electro-hydraulic control system pipe. The pipe failure dropped EHC system pressure, allowing the turbine governor valves to begin closing.</i>
19870817		<i>The reactor was shut down due to a leak on an electro-hydraulic control system supply line to a turbine governor valve.</i>
19870819		<i>The unit restarted from a 2 day outage.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
19870823		<i>The reactor was shut down to repair the main generator regulator valve potentiometer.</i>
19870825		<i>The unit restarted from a 56.7 hour outage.</i>
19870922		<i>The reactor was shut down to repair an oil leak from the upper reservoir of a reactor coolant pump.</i>
19870924		<i>The unit restarted from a 40.6 hour outage.</i>
19870930		<i>It was reported that the company had arranged to sell a 56 percent interest in the plant to Bechtel Power Corporation.</i>
19871001		<i>The reactor was shut down for a planned maintenance outage.</i>
19871015		<i>An Alert was declared when reactor shutdown cooling was lost for about 30 minutes with the reactor in cold shutdown. Operators manually tripped the shutdown cooling pump when its throttled control valve spuriously opened, causing pump discharge pressure to drop and pump cavitation to start. Operators nearly closed the throttled valve and opened its circuit breaker to prevent re-opening, then restarted the shutdown cooling pump.</i>
19871113		<i>Cooling tower A overflowed and flooded the south radwaste building and its surrounding areas.</i>
19871113		<i>The unit restarted from a 1,036.1 hour outage.</i>
19871204		<i>The reactor was shut down to repair a leaking tube in steam generator B.</i>
19880127		<i>The unit restarted from a 1,299.3 hour outage.</i>
19880427		<i>The reactor was shut down after a control rod dropped into the core due to a control rod drive mechanism clutch coil failure.</i>
19880501		<i>The unit restarted from a 4 day outage.</i>
19880808		<i>The operators shut down the reactor to enter refueling outage</i>
19880903		<i>During refueling, irradiated fuel assembly K-28 was removed from the reactor core when the upper guide structure was removed. The assembly stuck to the bundle guide pins on the upper guide structure. Workers separated the assembly from the upper guide structure and set it on the reactor core for inspection.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
19880903		<i>During a refueling outage, workers observed an irradiated fuel assembly stuck in the upper guide structure as it was being lifted from the reactor vessel.</i>
19881104		<i>The service water system vulnerability impacted several safety-related systems.</i>
19881128		<i>The unit was connected to the electrical grid to begin operating cycle</i>
19881206		<i>The reactor was shut down to repair a leaking tube in steam generator B.</i>
19881225		<i>The unit restarted from a 3 week outage.</i>
19890130		<i>The operators manually shut down the reactor to repair a primary-to-secondary tube leak in steam generator B.</i>
19890302		<i>The unit restarted from a 732 hour outage.</i>
19890804		<i>The reactor automatically tripped on low water level in the steam generator due to a blown fuse in the level control circuitry during dc ground troubleshooting activities.</i>
19890807		<i>The unit restarted from a 64.8 hour outage.</i>
19890930		<i>The reactor was shut down for a planned maintenance outage.</i>
19891121		<i>A pressurizer power operated relief valve (PORV) spuriously opened and the motor-operated block valve failed to close. The reactor tripped. The NRC dispatched an Augmented Inspection Team (AIT) to investigate the event.</i>
19891126		<i>The operators shut down the reactor after a power operated relief valve stuck open.</i>
19891126		<i>The operators restarted the reactor from a 1,352 hour maintenance outage.</i>
19891221		<i>The unit restarted from a 591.9 hour outage.</i>
19900109		<i>The operators manually tripped the reactor after feedwater pump P1A tripped.</i>
19900111		<i>The unit was connected to the electrical grid to end a 45.2 hour forced outage.</i>
19900228		<i>The reactor automatically tripped after feedwater pump P1B tripped.</i>
19900303		<i>The unit was connected to the electrical grid to end a 56.9 hour forced outage.</i>
19900314		<i>The unit was connected to the electrical grid to begin operating cycle</i>

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South Haven MI

Date	Reactor	Event Description
19900416		<i>The operators shut down the reactor to enter a planned maintenance outage.</i>
19900520		<i>The unit was connected to the electrical grid to end a 817 hour scheduled outage.</i>
19900609		<i>The reactor was shut down to replace pressurizer heater transformer No. 15.</i>
19900617		<i>The unit was connected to the electrical grid to end a 186.8 hour forced outage.</i>
19900915		<i>The reactor was shut down to enter refueling outage . During the outage, the steam generators were replaced.</i>
19910325		<i>The reactor was shut down to replace the level switch in safety injection tank C.</i>
19910327		<i>The unit was connected to the electrical grid to end a 42.7 hour forced outage.</i>
19910328		<i>As resin was being sluiced from tank T-104B to a resin storage cask, a clog pressurized and broke the transfer hose. About 20 cubic feet of resin spilled into the turbine building and onto the pavement outside. Workers decontaminated the pavement and turbine building floor.</i>
19911209		<i>The reactor was shut down due to a decrease in main generator seal oil pressure.</i>
19911214		<i>The unit was connected to the electrical grid to end a 124.6 hour forced outage.</i>
19920206		<i>The operators manually shut down the reactor as the limiting condition for operation time ran out on the main steam isolation valves being considered inoperable. Management opted to transition from this forced outage into refueling outage</i>
19920206		<i>The reactor was shut down to enter refueling outage</i>
19920324		<i>While sluicing resin from steam generator blowdown demineralizer T-104A, about half a barrel spilled onto the pavement near the resin storage cask. Some of the radioactively contaminated water may be entered the storm drain.</i>
19920418		<i>The unit was connected to the electrical grid to begin operating cycle</i>
19920701		<i>The reactor was shut down due to digital electro-hydraulic control system problems.</i>
19920703		<i>The unit was connected to the electrical grid to end a 61.9 hour forced outage.</i>
19920724		<i>The reactor was shut down due to digital electro-hydraulic control system problems.</i>

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South Haven MI

Date	Reactor	Event Description
19920729		<i>The unit was connected to the electrical grid to end a 116.4 hour forced outage.</i>
19920814		<i>The reactor was shut down due to a failed air line to a feedwater regulating valve.</i>
19920817		<i>The unit was connected to the electrical grid to end a 95.7 hour forced outage.</i>
19920825		<i>The reactor was shut down due to a failed solenoid for the Y-20 preferred ac bus.</i>
19920827		<i>The unit was connected to the electrical grid to end a 50.8 hour forced outage.</i>
19920919		<i>The reactor was shut down for investigation of a fatal accident.</i>
19920928		<i>The unit was connected to the electrical grid to end a 212.5 hour forced outage.</i>
19921030		<i>The reactor was shut down due to failure of an uninterruptible power supply in the turbine digital electro-hydraulic control system.</i>
19921108		<i>The unit was connected to the electrical grid to end a 229 hour forced outage.</i>
19930428		<i>The reactor was shut down due to unidentified leakage inside containment greater than the 1 gallon per minute technical specification limit.</i>
19930516		<i>The unit was connected to the electrical grid to end a 425 hour forced outage.</i>
19930604		<i>The reactor was shut down to enter refueling outage</i>
19930817		<i>Analysis of a full-length coupon removed from the spent fuel pool racks during the first five-year surveillance showed 85 to 90 percent of the boraflex neutron absorbing material missing. Three other full-length coupons were removed and found to each be missing 40 to 50 percent of the boraflex inventory.</i>
19931106		<i>The unit was connected to the electrical grid to begin operating cycle</i>
19940217		<i>The reactor was shut down to repair safety injection system check valves. The outage was extended to resolve cable separation issues.</i>
19940507		<i>A truck transporting a box of contaminated soil hit a bump, causing the box to fall from the truck. The box broke open and deposited about half its contents onto the road near the south radwaste building.</i>
19940618		<i>The unit was connected to the electrical grid to end a 2,899.5 hour forced outage.</i>

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Date	Reactor	Event Description
19940809		<i>An undetermined amount of radioactively contaminated liquid leaked from tank T-91 into the valve pit shared with tank T-90. Approximately 450 cubic feet of contaminated soil down to five feet were remediated.</i>
19950522		<i>The operators manually tripped the reactor to enter refueling outage</i>
19950821		<i>The unit was connected to the electrical grid to begin operating cycle</i>
19951202		<i>The operators reduced the reactor power level and took the generator offline to repair a control rod drive mechanism cooling fan.</i>
19951203		<i>The unit was connected to the electrical grid to end a 32 hour forced outage.</i>
19960116		<i>An Unusual Event was declared due to a reactor shutdown required for compliance with Technical Specifications.</i>
19960117		<i>The reactor was shut down after the 2400 volt AC power system automatically transferred from the normal power source (safeguards power) to the backup power source (startup power). Workers found a fault in the conduit for the power cable running under the turbine building.</i>
19960130		<i>The unit was connected to the electrical grid at 10:11 pm to end a 329.4 hour forced outage.</i>
19960306		<i>The operators reduced the reactor power level to 50 percent following the trip of cooling tower pump P-39B.</i>
19960311		<i>The operators returned the reactor power level to 100 percent.</i>
19960622		<i>The operators reduced the reactor power level to 40 percent to identify and plug condenser tube leaks.</i>
19960624		<i>The operators returned the reactor power level to 100 percent.</i>
19960702		<i>The operators shut down the reactor for repairs of an oil leak on Primary Coolant Pump P-50D.</i>
19960704		<i>The unit was connected to the electrical grid at 12:46 pm.</i>
19961101		<i>The reactor was shut down to enter refueling outage</i>
19961227		<i>The unit was connected to the electrical grid at 7:06 am to begin operating cycle</i>

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South Haven MI

Date	Reactor	Event Description
19970105		<i>The operators reduced the reactor power level and tripped the main turbine to fix main generator flex connector problems. The reactor remained critical at low power.</i>
19970106		<i>The unit was connected to the electrical grid at 2:08 pm to end a 31 hour forced outage. The reactor remained critical at low power during the outage.</i>
19970106		<i>The operators shut down the reactor due to a steam leak on a main steam isolation valve.</i>
19970114		<i>The unit was connected to the electrical grid at 3:02 pm to end a 171 hour forced outage.</i>
19970123		<i>The operators shut down the reactor due to main generator flex connector problems.</i>
19970208		<i>The unit was connected to the electrical grid at 6:40 pm to end a forced outage.</i>
19970210		<i>The operators returned the reactor power level to 100 percent at 5:45 am.</i>
19970212		<i>The operators reduced the reactor power level to 49 percent due to high vibrations on the main generator bishings.</i>
19970217		<i>The operators reduced the reactor power level and tripped the main turbine due to a hydrogen leak in the main generator.</i>
19970219		<i>The unit was connected to the electrical grid at 8:03 pm to end a forced outage. The reactor remained critical at low power during the outage.</i>
19970221		<i>The operators returned the reactor power level to 100 percent at 3:00 am.</i>
19970930		<i>The reactor was shut down to repair a small leak on a primary coolant pump seal loakoff line.</i>
19980206		<i>The operators shut down the reactor to enter a planned maintenance outage to refill a primary coolant pumpo motor oil reservoir.</i>
19980209		<i>The unit was connected to the electrical grid at 8:30 pm to end a 69.3 hour scheduled outage.</i>
19980402		<i>The NRC issued a notice of violation and proposed civil penalty of \$55,000 for a maintenance error in which workers de-energized all control rod drives while the reactor was operating in order to repair a single control rod drive.</i>
19980424		<i>The unit was shut down to enter refueling outage</i>

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South Haven MI

Date	Reactor	Event Description
19980607		<i>The unit was connected to the electrical grid at 10:57 pm to begin operating cycle</i>
19980609		<i>The operators tripped the generator at 2:52 pm due to high vibrations on the main turbine.</i>
19980610		<i>The unit was connected to the electrical grid at 4:39 pm. The reactor remained critical at low power during the outage.</i>
19980614		<i>The operators returned the reactor power level to 100 percent.</i>
19980721		<i>The operators manually tripped the reactor from 100 percent power at 2:52 pm in response to one of two feedwater pumps tripping. Workers determined that a failed coupling caused low oil pressure for the feedwater pump that tripped.</i>
19980722		<i>The unit was connected to the electrical grid at 10:22 pm to end a 16.1 hour forced outage.</i>
19980727		<i>The operators returned the reactor power level to 100 percent.</i>
19980926		<i>The operators reduced the reactor power level to 44 percent to repair a leaking condenser tube.</i>
19980928		<i>The operators returned the reactor power level to 100 percent at 4:40 am.</i>
19981211		<i>The NRC issued a notice of violation (Severity Level III) for an event in which the high pressure safety injection (HPSI) system was rendered inoperable for approximately 90 minutes during a surveillance test. Inadequate review of the surveillance test procedure resulted in the system being configured such that it would have been unable to automatically perform its safety function in event of an accident.</i>
19981213		<i>The operators shut down the reactor to fix an oil leak on Primary Coolant Pump P-50D. The outage was extended to resolve problems with the safeguards transformer and a leak on one of the control rod drive mechanisms.</i>
20000204		<i>The operators manually tripped the reactor at 9:58 pm for administrative control of sodium in the steam generators. Workers also replaced a seal on a reactor coolant pump and made a balance adjustment to the turbine generator.</i>
20000215		<i>The operators began heating up the primary system for restart.</i>
20000216		<i>The operators returned the reactor to cold shut down due to leakage from control rod drive mechanism (CRDM) seals. Workers rebuilt eight CRDMs.</i>

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Date	Reactor	Event Description
20000218		<i>The NRC granted enforcement discretion from the technical specification requirement to demonstrate the operability of auxiliary feedwater pump P-8B prior to reactor startup via pump starts using the normal and backup control room switches. The company requested enforcement discretion because a steam leak developed on February 5, 2000, from the area of the backup steam piping to the auxiliary feedwater pump.</i>
20000229		<i>The unit was connected to the electrical grid.</i>
20000311		<i>The operators reduced the reactor power level to 60 percent to repair a seal on feedwater pump A.</i>
20000314		<i>The operators returned the reactor power level to 100 percent.</i>
20000404		<i>The reactor automatically tripped from 100 percent power due to a problem as an electrical breaker was being racked out of service.</i>
20000507		<i>The unit was connected to the electrical grid to end a forced outage.</i>
20000510		<i>The operators returned the reactor power level to 100 percent.</i>
20000617		<i>The operators reduced the reactor power level to 60 percent to repair a seal on feedwater pump A.</i>
20000624		<i>The operators returned the reactor power level to 100 percent.</i>
20000701		<i>The operators shut down the reactor due to a primary coolant system leak.</i>
20000708		<i>The outage was extended 34 hours by a control rod drive mechanism malfunction.</i>
20000709		<i>The unit was connected to the electrical grid at 9:58 pm to end a forced outage.</i>
20000711		<i>The operators returned the reactor power level to 100 percent.</i>
20000905		<i>The operators shut down the reactor at 11:49 pm due to a problem with safeguards check valve CK-ES-3332.</i>
20000917		<i>The unit was connected to the electrical grid at 2:42 am to end a forced outage.</i>
20000930		<i>Reactor listed in the Regulatory Response Column</i>
20001027		<i>The operators reduced the reactor power level to 48 percent to repair leaking tubes in the condenser.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
20001030		<i>The operators returned the reactor power level to 100 percent.</i>
20010330		<i>The operators manually shut down the reactor to enter refueling outage 15.</i>
20010510		<i>The unit was connected to the electrical grid to begin operating cycle 16.</i>
20010620		<i>The operators manually shut down the reactor due to increasing unidentified primary coolant system leakage.</i>
20010621		<i>Workers reported leakage from one control rod drive mechanism nozzle through the reactor vessel head caused by primary water stress corrosion cracking.</i>
20010621		<i>Pressurized water stress corrosion cracking caused a control rod drive mechanism to leak reactor coolant system water.</i>
20010627		<i>The NRC issued a notice of violation and proposed civil penalty of \$55,000 for failure to provide complete and accurate information regarding a request of the NRC for enforcement discretion and an exigent technical specification amendment request.</i>
20010911		<i>Discovery that smoke detectors were improperly located in the cable spreading room reducing the likelihood that a fire would be promptly detected</i>
20010930		<i>Reactor listed in the Regulatory Response Column</i>
20011026		<i>The NRC issued a notice of violation and White finding for failure to install smoke detectors in the cable spreading room as required by the applicable National Fire Protection Association code.</i>
20011231		<i>Reactor listed in the Regulatory Response Column</i>
20020121		<i>The unit was connected to the electrical grid at 5:24 am to end a protracted maintenance outage.</i>
20020331		<i>Reactor listed in the Regulatory Response Column</i>
20020518		<i>The operators reduced the reactor power level to 23 percent to add oil to a primary coolant pump.</i>
20020520		<i>The operators returned the reactor power level to 100 percent.</i>
20020611		<i>The operators reduced the reactor power level to 50 percent after one of the cooling tower pumps tripped.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
20020614		<i>The operators returned the reactor power level to 100 percent.</i>
20020630		<i>Reactor listed in the Regulatory Response Column</i>
20020827		<i>The operators reduced the reactor power level to 50 percent to add oil to primary coolant pump D (P-50D).</i>
20020830		<i>The operators returned the reactor power level to 100 percent.</i>
20020927		<i>The operators reduced the reactor power level to 25 percent to add oil to primary coolant pump D (P-50D).</i>
20020929		<i>The operators returned the reactor power level to 100 percent.</i>
20021111		<i>The operators reduced the reactor power level to 60 percent to repair a leak in the level instrument line for safety injection tank T-82D.</i>
20021113		<i>The operators returned the reactor power level to 100 percent.</i>
20021115		<i>The NRC granted enforcement discretion from the technical specification requirement to shut down the reactor with a safety injection tank inoperable for 24 hours. The company requested and the NRC approved 24 additional hours to restore the safety injection tank to service. Workers declared safety injection tank (SIT) T-82D inoperable after trending indicated excessive leakage.</i>
20021201		<i>The reactor automatically tripped from 100 percent power at 9:54 pm when a static line between the plant and the switchyard failed.</i>
20021205		<i>The unit was connected to the electrical grid at 11:59 am to end a forced outage.</i>
20030115		<i>The operators reduced the reactor power level to 62 percent due to steam generator level instrument setpoint problems.</i>
20030116		<i>The NRC granted enforcement discretion from the technical specification requirement to shut down the reactor within 1 hour with all eight steam generator low level trip channels inoperable. Workers determined that an engineering analysis performed in 1998 had applied the pressure compensation factor to the level transmitters in the wrong direction such that the steam generator trip signals would not occur when required by the safety studies and technical specifications. The company sought and the NRC approved continued reactor operation for up to 36 hours while the eight instruments were recalibrated to the currently thought proper points.</i>

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South Haven MI

Date	Reactor	Event Description
20030117		<i>The operators returned the reactor power level to 100 percent.</i>
20030316		<i>The operators manually shut down the reactor to enter refueling outage 16.</i>
20030318		<i>With the reactor shut down for refueling, the operators declared an Alert due to a fire in the cable spreading room. The fire started in the breaker compartment on load center #12 for charging pump 55A. The fire was extinguished in 53 minutes by de-energizing the 480 volt ac load center.</i>
20030318		<i>An Alert was declared following activation of a fire alarm for the cable spreading room coupled with reports to the control room operators of smoke in the vicinity. The reactor was shut down at the time and the Alert was declared due to the potential of the fire affecting equipment relief upon for reactor shutdown cooling. The fire brigade responded to the alarm and observed a significant amount of smoke in the room, but no flames. The source of the smoke was attributed to a circuit breaker for charging pump P-55A.</i>
20030325		<i>An Alert was declared when a loss of offsite power caused reactor shutdown cooling to be lost. The reactor had shut down on March 16, 2003, for a refueling outage. Both of the emergency diesel generators automatically started and connected to their safety-related electrical buses. Operators restored shutdown cooling after a reactor coolant system temperature increase of 11F.</i>
20030325		<i>With the reactor shut down, a problem at the plant resulted in a loss of offsite power. Recovery was complicated by a temporary loss of shutdown cooling for the reactor.</i>
20030325		<i>Loss of offsite power during a refueling outage caused by workers driving a post in the parking lot. Shutdown cooling was interrupted for 20 minutes.</i>
20030420		<i>The unit was connected to the electrical grid at 12:35 pm to begin operating cycle 17.</i>
20030703		<i>The NRC granted enforcement discretion from the technical specification requirement to shut down the reactor when one of two trains of containment cooling are inoperable for 72 hours. On July 1, 2003, the electrical breaker in the power supply to containment air cooler recirculation fan motor V-4A tripped on thermal overload. Workers found that the fan motor shaft was bent and the fan housing supports were damaged. The problems required the fan and its motor to be replaced and the fan housing supports to be repaired. The company sought and the NRC granted 100 additional hours to the 72-hour allowable outage time to effect the repairs while the reactor continued to operate.</i>
20031231		<i>Reactor listed in the Regulatory Response Column</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
20040218		<i>The operators reduced the reactor power level to 72 percent for repairs to a feedwater pump.</i>
20040219		<i>The operators reduced the reactor power level to 59 percent to complete the feedwater pump repairs and post-maintenance testing.</i>
20040222		<i>The operators returned the reactor power level to 100 percent.</i>
20040331		<i>Reactor listed in the Regulatory Response Column</i>
20040623		<i>The NRC approved a 1.4 percent increase in the maximum licensed power level.</i>
20040706		<i>The operators reduced the reactor power level to 59 percent due to excessive leakage from the outboard seal on feedwater pump P-1B.</i>
20040713		<i>The operators returned the reactor power level to 100 percent.</i>
20040722		<i>The operators reduced the reactor power level to 29 percent due to a upper motor bearing oil leak from condensate pump P-2B.</i>
20040728		<i>The operators returned the reactor power level to 100 percent.</i>
20040810		<i>The operators manually shut down the reactor to replace seals on control rod drive mechanisms (CRDMs) 19 and 29.</i>
20040817		<i>The unit was connected to the electrical grid at 3:19 am to end a forced outage.</i>
20040831		<i>The operators manually tripped the reactor from 95 percent power due to a fire in condensate pump 2B. The fire brigade put out the fire in 9 minutes.</i>
20040831		<i>The operators manually tripped the reactor at 7:18 am due to a fire in a condensate pump motor.</i>
20040901		<i>The unit was connected to the electrical grid at 9:10 pm to end a forced outage.</i>
20040919		<i>The operators manually shut down the reactor to enter refueling outage 17.</i>
20041117		<i>The unit was connected to the electrical grid at 5:08 pm to begin operating cycle 18.</i>
20050109		<i>The operators manually tripped the reactor due to loss of condenser vacuum. Workers identified a leak path to the condenser and repaired it.</i>
20050119		<i>The unit was connected to the electrical grid at 6:27 am to end a forced outage.</i>

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South Haven MI

Date	Reactor	Event Description
20050331		<i>The NRC received an application for license renewal.</i>
20050901		<i>The operators manually tripped the reactor at 10:25 am due to excessive hydrogen leakage from the main generator.</i>
20050903		<i>The unit was connected to the electrical grid at 8:15 pm to end a forced outage.</i>
20051113		<i>The operators reduced the reactor power level to 52 percent due to buildup of debris on the cooling tower screens.</i>
20051116		<i>The operators returned the reactor power level to 100 percent.</i>
20051231		<i>The operators manually shut down the reactor to enter a scheduled maintenance outage for control rod drive mechanisms (CRDMs).</i>
20060106		<i>The unit was connected to the electrical grid at 2:42 pm to end a scheduled maintenance outage.</i>
20060401		<i>The operators manually shut down the reactor to enter refueling outage 18.</i>
20060419		<i>Workers lowered a shipping cask and cask liner into the refueling cavity pool inside containment. The liner stored irradiated incore detector remnants placed there during previous refueling outages. About 30 minutes after the cask lid was removed, the liner floated to the surface of the cavity pool. The radiation levels from the irradiated components at the surface of the pool forced workers to evacuate the area. After about 12 seconds, the liner sank down to the bottom of the cavity pool.</i>
20060420		<i>The NRC dispatched a special inspection team to investigate the floating cask liner event.</i>
20060510		<i>The unit was connected to the electrical grid to begin operating cycle 19.</i>
20060511		<i>The operators manually shut down the reactor to couple control rod 3-33.</i>
20060516		<i>The unit was connected to the electrical grid to end a forced outage.</i>
20060630		<i>Reactor listed in the Regulatory Response Column</i>
20060721		<i>The NRC's special inspection team report identified 1 Green finding related to the floating cask liner event.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
20060731		<i>The company reported that at some unspecified date in the past, 2,790 gallons of radioactively contaminated water leaked from utility water storage tank (T-91) onto the floor. Some water seeped through the wall of the room into the ground.</i>
20060731		<i>The company reported that at unspecified dates in the past, cooling tower overflow incidents resulted in non-radioactively contaminated water flowing through the south storage building that contained radioactively contaminated equipment. The now radioactively contaminated run-off flow contaminated soil around the structure to a depth of six inches.</i>
20061101		<i>The operators manually shut down the reactor to repair a service water leak on a containment air cooler.</i>
20061103		<i>During a reactor startup, an NRC inspector observed that the control switches for all three auxiliary feedwater (AFW) pumps were in manual rather than in automatic as specified by plant operating procedures.</i>
20061104		<i>The unit was connected to the electrical grid to end a forced outage.</i>
20061106		<i>The NRC's special inspection team began investigating the mispositioning of control switches for all of the auxiliary feedwater pumps.</i>
20061229		<i>The NRC's special inspection team report identified 3 Green findings for the mispositioning of control switches for all of the auxiliary feedwater pumps.</i>
20070117		<i>The NRC approved license renewal.</i>
20070226		<i>The operators manually shut down the reactor for repairs to electrical cables and control rod drive seals.</i>
20070306		<i>The unit was connected to the electrical grid at 5:55 am.</i>
20070508		<i>The reactor automatically tripped on low water level in the steam generator after instrument and control technicians working on the feedwater regulating valve inadvertently signalled the valve to close.</i>
20070514		<i>The unit was connected to the electrical grid at 11:58 am to end a forced outage.</i>
20070909		<i>The operators manually shut down the reactor to enter refueling outage 19.</i>
20071021		<i>The unit was connected to the electrical grid at 8:27 am to begin operating cycle 20.</i>

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## Palisades

South Haven MI

Date	Reactor	Event Description
20071210		<i>Workers determined tritium levels of 22,000 picocuries per liter in a monitoring well recently installed at the site.</i>
20080113		<i>The operators manually tripped the reactor after failure of the drive coupling on the main shaft-driven lube oil pump caused feedwater pump 1B to trip.</i>
20080114		<i>The unit was connected to the electrical grid at 9:09 pm to end a 41.8 hour forced outage.</i>
20080523		<i>The reactor automatically tripped from 100 percent power when the generator negative phase sequence relay failed, causing a loss of load signal.</i>
20080525		<i>The unit was connected to the electrical grid at 2:17 am to end a 37.47 hour forced outage.</i>
20080805		<i>The operators shut down the reactor to repair leaking seals on five control rod drives.</i>
20080808		<i>The NRC's special inspection team began investigating an event where workers inside the containment were unable to exit via the containment access doors or communicate with plant personnel.</i>
20080809		<i>The unit was connected to the electrical grid to end a 104.6 hour forced outage.</i>
20081231		<i>Reactor listed in the Regulatory Response Column</i>
20090217		<i>The operators manually tripped the reactor to enter a forced outage to repair a leaking control rod drive mechanism seal.</i>
20090221		<i>The unit was connected to the electrical grid to end a forced outage.</i>
20090322		<i>The operators manually tripped the reactor to enter refueling outage 20.</i>
20090331		<i>Reactor listed in the Regulatory Response Column</i>
20090502		<i>The unit was connected to the electrical grid to begin operating cycle 21.</i>
20090630		<i>Reactor listed in the Regulatory Response Column</i>
20090930		<i>Reactor listed in the Regulatory Response Column</i>
20091231		<i>Reactor listed in the Regulatory Response Column</i>

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South Haven MI

Date	Reactor	Event Description
20100331		<i>Reactor listed in the Regulatory Response Column</i>
20100624		<i>The reactor was shut down to repair a leaking control rod drive mechanism seal.</i>
20100630		<i>Reactor listed in the Regulatory Response Column</i>
20100703		<i>The unit was connected to the electrical grid to end a 10 day forced outage.</i>
20101003		<i>The operators shut down the reactor to enter refueling outage 21.</i>
20101017		<i>The turbine-driven auxiliary feedwater pump P-8B was inoperable between October 29, 2010, and May 11, 2011, due to inadequate maintenance.</i>
20101029		<i>The unit was connected to the electrical grid to begin operating cycle 22.</i>
20110108		<i>The operators reduced the reactor power to 54 percent after the failure of electrical breaker 252-302 caused power to be lost to cooling power pump P-39A.</i>
20110116		<i>The operators returned the reactor power level to 100 percent.</i>
20110122		<i>The reactor automatically tripped due to a ground fault on one of the main generator cables.</i>
20110125		<i>The unit was connected to the electrical grid to end a 60 hour forced outage.</i>
20110916		<i>The operators manually tripped the reactor when unidentified leakage inside the containment exceeded 10 gallons per minute. Workers determined the source to be a packing leak on pressurizer spray valve CV-1057.</i>
20110920		<i>The unit was connected to the electrical grid to end a 94.18 hour forced outage.</i>
20110925		<i>Inadequate work control instructions led to loss of a 125 volt dc train and reactor trip.</i>
20110925		<i>The reactor automatically tripped when maintenance on DC bus D-11-2 caused two of the four preferred AC electrical buses to be de-energized.</i>
20111002		<i>The unit was connected to the electrical grid to end a 7 day forced outage.</i>
20111214		<i>The operators manually tripped the reactor after both feedwater pumps tripped on low suction pressure.</i>
20111216		<i>The unit was connected to the electrical grid to end a 32.47 hour forced outage.</i>

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South Haven MI

Date	Reactor	Event Description
20111217		<i>The operators returned the reactor power level to 100 percent.</i>
20111231		<i>Reactor listed in the Degraded Cornerstone Column</i>
20120105		<i>The reactor was shut down due to leakage through a control rod drive mechanism mechanical seal.</i>
20120108		<i>The unit was connected to the electrical grid to end a 82.5 hour scheduled outage.</i>
20120214		<i>The NRC issued a White Finding for installation of a safety-related service water pump coupling in December 2007 using material inadequate for the environment and working conditions leading to the pump's failure.</i>
20120328		<i>The operators reduced the reactor power level to 60 percent to remove Cooling Tower A from service.</i>
20120331		<i>Reactor listed in the Degraded Cornerstone Column</i>
20120408		<i>The operators shut down the reactor to enter refueling outage 22.</i>
20120512		<i>The unit was connected to the electrical grid to begin operating cycle 23.</i>
20120612		<i>The reactor was shut down to repair leaks from the Safety Injection Refueling Water tank.</i>
20120630		<i>Reactor listed in the Degraded Cornerstone Column</i>
20120711		<i>The reactor was connected to the electrical grid to end a one month scheduled outage for repairs to the safety injection refueling water tank.</i>
20120812		<i>The reactor was shut down to enter a planned maintenance outage to repair reactor coolant system leakage inside containment. Pressure boundary leakage was found from the upper housing of control rod drive 24.</i>
20120830		<i>The reactor was connected to the electrical grid to end a 436.27 hour scheduled outage.</i>
20120930		<i>Reactor listed in the Degraded Cornerstone Column</i>
20121104		<i>The reactor was shut down to repair a non-isolable steam leak upstream of a drain valve on an atmospheric steam dump valve.</i>

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South Haven MI

Date	Reactor	Event Description
20121107		<i>The unit was connected to the electrical grid at 1:09 pm to end a 68.8 hour forced outage.</i>
20130215		<i>The reactor was shut down to repair a leak in the component cooling water heat exchanger.</i>
20130222		<i>The reactor was connected to the electrical grid at 12:44 am to end a 151.92 hour forced outage.</i>
20130505		<i>The operators shut down the reactor due to leakage from the safety injection refueling water storage tank.</i>
20130617		<i>The unit was connected to the electrical grid to end a five week forced outage.</i>
20140119		<i>The operators shut down the reactor to enter refueling outage 23.</i>
20140316		<i>The unit was connected to the electrical grid to begin operating cycle 24.</i>
20140620		<i>The operators shut down the reactor to enter a planned outage for replacement of the seal on reactor coolant pump P-50C.</i>
20140626		<i>The unit was connected to the electrical grid at 2:40 pm to end a 135.17 hour scheduled outage.</i>
20141231		<i>Reactor listed in the Regulatory Response Column</i>
20150331		<i>Reactor listed in the Regulatory Response Column</i>
20150916		<i>The reactor automatically tripped due to a power supply failure in the turbine digital electro-hydraulic control system. The company opted to enter refueling outage 24.</i>
20151019		<i>The unit was connected to the electrical grid to begin operating cycle 25.</i>
20170317		<i>The operators shut down the reactor for repairs of a control rod drive seal.</i>
20170323		<i>The unit was connected to the electrical grid to end a 132.82 hour forced outage.</i>
20170423		<i>The operators shut down the reactor to enter refueling outage 25.</i>
20170517		<i>The operators shut down the reactor at 7:32 pm for repairs of a leaking control rod drive seal.</i>

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South Haven MI

Date	Reactor	Event Description
20170517		<i>The operators achieved criticality of the reactor at 5:52 am.</i>
20170520		<i>The unit was connected to the electrical grid at 5:09 pm to begin operating cycle 26.</i>
20180326		<i>The reactor was shut down to repair a leak on a control rod drive seal.</i>
20180329		<i>The unit was connected to the electrical grid to end a 82.22 hour scheduled outage.</i>
20181013		<i>The reactor was shut down to repair a control rod drive seal.</i>
20181028		<i>The outage transitioned into refueling outage 26.</i>
20181224		<i>The operators shut down the reactor at 8:01 pm to repair the seals on control rod drives 25 and 37.</i>
20181224		<i>The operators achieved reactor criticality at 11:13 am in an attempted startup following refueling outage 26.</i>
20181228		<i>The unit was connected to the electrical grid at 4:35 am to begin operating cycle 27.</i>
20190109		<i>The reactor automatically tripped during a surveillance test on the B Power Range Safety Channel. The B power range drawer had a latest design vulnerability with capacitors with uninsulated leads.</i>
20190111		<i>The unit was connected to the electrical grid to end a 45.9 hour forced outage.</i>
20190727		<i>The operators shut down the reactor to enter a planned maintenance outage to repair the backup power supply for the digital electrohydraulic control system.</i>
20190731		<i>The unit was connected to the electrical grid to end an 88.3 scheduled outage.</i>
20200830		<i>The reactor was shut down to enter refueling outage 27.</i>
20201021		<i>The unit was connected to the electrical grid to begin operating cycle 28.</i>
20210728		<i>The operators reduced the reactor power level to 28 percent to repair a condensate pump.</i>
20210731		<i>The operators returned the reactor power level to 100 percent.</i>

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