

# nuclear news

## List of Scheduled Outages at U.S. Nuclear Power Plants

This list includes refueling or maintenance outages at U.S. nuclear power plants, scheduled to occur anytime from July 1989 through June 1990. Also included are outages that will last into July 1989 or later.

The list provides information on:

- Planned dates
- Major activities
- Which activities will be critical path (if known now) (Not all critical path activities are necessarily included.) (Critical path activities are marked with an asterisk (\*).)
- Number of trains involved (e.g., "2 of 2").
- Coarctdown

- Operating cycle length after refueling.

These parameters often change, however, in response to operating variables such as component or system failures, unplanned outages, and actual capacity factor and fuel burnup. The information provided is thus subject to change.

Determination of a planned operating cycle involves factors such as estimated duration at full power divided by the estimated capacity factor. Accordingly, operating cycles are not necessarily directly comparable from one utility to another.

The extent to which routine inspection and maintenance activities are included varies from one plant to that of another.

The abbreviations used are defined at the end of this list.

	Net MWe	Reactor Type/Supplier	Estimated Outage Dates				
<b>Alabama Power Co.</b>				Palo Verde 3 (Wintersburg, Ariz.)	1221	PWR/C-E	None scheduled
Joseph M. Farley 1 (Dothan, Ala.)	813	PWR/W	9/22/89 about 40 days	<b>Arkansas Power &amp; Light</b>			
• RF* • BOP ISI • SGs (3 of 3)—FOSAR, EC, J-nozzle insp, SL, pressure pulse cl • RCP seal insp (2 of 3) • RCP 5-yr motor insp & resistance ring ChO (1 of 3) • RCP 1-yr motor insp (2 of 3) • RV flange cl • HPT insp • turb valve insp (6 of 16) • moisture separator insp (2 of 4) • moisture separator relief valve insp (2 of 4) • gen crawl-through insp/no CD/18 months SU to SU				Nuclear One 1 (Russellville, Ark.)	836	PWR/B&W	12/1/89- 12/21/89
Joseph M. Farley 2 (Dothan, Ala.)	823	PWR/W	None scheduled	• install of 4 flow venturis in HP injection syst* • 18-month surv/no CD			
<b>Arizona Public Power Service Co.</b>				Nuclear One 2 (Russellville, Ark.)	858	PWR/C-E	9/15/89, less than 10 wks
Palo Verde 1 (Wintersburg, Ariz.)	1221	PWR/C-E	None scheduled	• RF* • RV ISI* • RF equip mods* • SGs (2 of 2)—EC & SL • MOV maint & mods • LLRT • TG OH • insp of about 100 check valves • LPT rotor repl (1 of 2) • RCP vibration detection install (4 of 4) • RCP motor OH (1 of 4) • core protection calculator syst mods completion • SW piping & valve mods (2 of 2) • ATWS rule mods/CD starts 9/9/89/15 months SU to SD			
Palo Verde 2 (Wintersburg, Ariz.)	1221	PWR/C-E	1/13/90, about 100 days	<b>Baltimore Gas &amp; Electric</b>			
• RF* • RCS cleanup to reduce antimony activity* • SGs* (2 of 2)—EC & repair • integrated safeguards testing (2 of 2)* • DG insp & testing (2 of 2) • RCP lower shaft insp (4 of 4) • 18-month surv • turb insp (1 of 4) • gen insp • ASME Section XI testing • snubber insp • Class 1-E battery chargers testing (2 of 2) • general inspections & misc. maintenance CD/18 months SU to SD				Calvert Cliffs 1 (Lusby, Md.)	825	PWR/C-E	3/30/90- 5/28/90
				• RF • SGs (2 of 2)—100% EC • OH of turb control valves & stop valves (6 of 8) • OH of MFWP, turb, & valves (1 of 2) • RCP motor OH (1 of 4) • repl of all RCP seals w/ new design (4 of 4) • OH of LPSI pump (1 of 2) • OH of HP SI pump (1 of 3) • OH of containment spray pump (1 of 2) • primary ISI • secondary ISI & pipe repl • walkdowns per Gen Ltr 88-17 reqs • 73 other plant mods • disassembly/insp of LPT (1 of 3)/CPNYD/no CD/24 months SU to SU			

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# PLANNED OUTAGES

	Net M/We	Reactor Type/ Supplier	Estimated Outage Dates
<b>Baltimore Gas &amp; Electric—cont'd</b>			
Calvert Cliffs 2 (Lusby, Md.)	825	PWR/C-E	3/27/90-3/19/90
• general maint outage/CPNYD/no CD			
<b>Boston Edison Co.</b>			
Pilgrim 1 (Plymouth, Mass.)	670	BWR/GE	NYD
• maint outage			
<b>Carolina Power &amp; Light Co.</b>			
Robinson 2 (Hartsville, S.C.)	665	PWR/W	3/17/90-5/25/90
• RF* • SG EC* • CR habitability mod* • SW pipe repl for containment penetrations to booster pumps* • electrical penetration repl* • rad monitoring syst upgrade • removal of turb redundant overspeed trip syst • reactor internals component insp & measurement • repair of FIV stop check valve • TG insp & repair • install of new lube oil warmer syst for emergency DGs/no CD/14 months SU to SD			
Brunswick 1 (Southport, S.C.)	790	BWR/GE	4/28/90-8/10/90
• RF* • SWS piping phase III repl* • RV water level instr upgrade* • CR upgrade • ECOS sequential starting upgrade • hydrogen water chem evaluation • ATWS mod • relocation of MSIVs • 480-V AC motor protection mod • nitrogen pneumatic syst mod/no CD/14 months SU to SD			
Brunswick 2 (Southport, S.C.)	790	BWR/GE	9/1/89-12/22/89
• RF* • SWS piping phase III repl* • ILRT* • CR upgrade • relocation of MSIVs • nitrogen pneumatic syst mod • rad block monitor instr mod • reactor recirc pump & discharge valve upgrade • ATWS mod/CD starts 5/26/89/15 months SU to SD			
Shearon Harris (New Hill, N.C.)	860	PWR/W	11/11/89-1/12/90
• RF* • SG EC & SL • pressurizer manway stud install • LPT insp • snubber insp & testing • response time testing • ILRT • emergency DG insp/CPNYD/no CD/14 months SU to SD			
<b>The Cleveland Electric Illuminating Co.</b>			
Perry 1 (North Perry, Ohio)	1205	BWR/GE	None scheduled
<b>Commonwealth Edison Co.</b>			
Dresden 2 (Morris, Ill.)	772	BWR/GE	None scheduled
Dresden 3 (Morris, Ill.)	773	BWR/GE	11/18/89-1/28/90
• completion of DCRDR mods* • ILRT* • RF • insp of gen retaining rings (1 of 1)/no CD/14 months SU to SD			
LaSalle County 1 (Seneca, Ill.)	1036	BWR/GE	9/2/89-11/28/89
• completion of drywell cooling mod* • completion of DCRDR mods* • install of new analog RPS* • RF • repl of 2 batteries/no CD/16 months SU to SD			
LaSalle County 2 (Seneca, Ill.)	1036	BWR/GE	3/3/90-6/2/90
• completion of DCRDR mods* • install of analog RPS* • ILRT* • RF • repl of 2 batteries/no CD/18 months SU to SD			
Zion 1 (Zion, Ill.)	1040	PWR/W	9/8/89-11/19/89
• completion of DCRDR mods* • SGs* (4 of 4)—EC & sleeving • RF • removal of boron injection tank • mod of aux FW valves/no CD/16 months SU to SD			
Zion 2 (Zion, Ill.)	1040	PWR/W	3/2/90-6/1/90
• completion of DCRDR mods* • RF • reroute of auxiliary FW piping • removal of boron injection tank • ChO of HPT stationary blades/no CD/16 months SU to SD			
Byron 1 (Byron, Ill.)	1105	PWR/W	1/6/90-4/7/90
• completion of DCRDR mods* • RF • ChO of "B" and "C" LPT rotors • insp of gen retaining rings • DGs (1 of 4)—5-yr insp/no CD/18 months SU to SD			
Byron 2 (Byron, Ill.)	1105	PWR/W	None scheduled
Braidwood 1 (Braidwood, Ill.)	1120	PWR/W	9/2/89-11/12/89
• SGs* (4 of 4)—100% EC • tube stress relief • RF • LPT rotor repl (1 of 3) • snubber reduction • SGs (4 of 4)—moisture carry-over mod/CD starts 6/8/89/17 months SU to SD			
Braidwood 2 (Braidwood, Ill.)	1120	PWR/W	3/17/90-6/16/90
• SGs* (4 of 4)—100% EC • RF • LPT rotor repl (1 of 3) • snubber reduction mod/CD starts 12/1/89/18 months SU to SD			
Quad-Cities 1 (Cairo, Ill.)	769	BWR/GE	9/9/89-11/19/89
• completion of DCRDR mods* • mechanical stress improvement on recirc piping welds* • weld overlay on some recirc piping welds* • RF • repl of 125-V battery • repl of cleanup syst • moderator/CD starts 6/2/89/11 months SU to SD			
Quad-Cities 2 (Cairo, Ill.)	769	BWR/GE	2/2/90-4/29/90
• completion of DCRDR mods* • weld overlay on some recirc piping welds* • RF • LPT rotor repl (2 of 3) • repl of cleanup syst • penetration • mechanical stress improvement on some recirc syst welds • repl of containment bellows/CD starts 10/24/89/17 months SU to SD			
<b>Connecticut Yankee Atomic Power Co.</b>			
Haddam Neck (Haddam Neck, Conn.)	565	PWR/W	9/9/89-11/4/89
• RF • initial core offload* • SGs (2 of 2)—insp/EC • nuclear instr repl • App R switchgear bid repair/no CD/14 months SU to SD			
<b>Consolidated Edison Co.</b>			
Indian Point 2 (Indian Point, N.Y.)	864	PWR/W	None scheduled
<b>Consumers Power Co.</b>			
Big Rock Point (Charlevoix, Mich.)	67	BWR/GE	6/10/89, 65 days
• RF* • complete turb OH* • plant mods • surv • cable ChO/CD planned, start date NYD/12 months SU to SD			
Palisades (South Haven, Mich.)	780	PWR/C-E	10/1/89, 45 days
• SGs* (2 of 2)—EC & repair of Westinghouse tube plugs • dilution water pump OH (2 of 2) • valve repair work • plant mods/no CD			
3/1/90, about 45 days			
• plant mods • TG M & mods • valve repair work/CPNYD/no CD			
<b>Detroit Edison Co.</b>			
Ferri 2 (Newport, Mich.)	1093	BWR/GE	9/8/89-11/20/89
• RF* —repl of 1/3 of fuel • ChO of up to 15 CRDs • LPT insp • main gen insp • 18-month OH of 4 emergency DGs • drywell ILRT/no CD/15 months SU to SD			
<b>Duke Power Co.</b>			
Oconee 1 (Seneca, S.C.)	846	PWR/B&W	4/22/90-6/6/90
• RF* • containment ILRT* • RV weld inspections (2) • SGs (4 of 4)—EC & plugging/restoration • RCP seal insp/repl (2 of 4)/no CD/44 days SU to SD			
Oconee 2 (Seneca, S.C.)	846	PWR/B&W	5/20/89-7/2/89
• RF* • LPT insp (2 of 3)* • SGs (4 of 4)—EC & plugging/restoration			

● RCP seal insp/repl (2 of 4) ● ISI of pressure vessels—2 RV head welds, 4 SG 2A welds, 2 pressurizer welds/no CD/444 days SU to SD

Oconee 3 (Seneca, S.C.) 846 PWR/B&W 11/16/89-12/25/89

● RF ● containment ILRT ● "B" LPT maint ● ISI of pressure vessels—2 RV head welds, 3 SG 3B welds, 1 SG 3A weld ● SGs—EC & plugging/restoration /no CD/444 days SU to SD

McGuire 1 (Cornelius, N.C.) 1129 PWR/W 3/15/90-5/23/90

● RF ● SGs (4 of 4)—cold leg shot peening ● SG EC, plugging/restoration & nozzle dams ● RCP (1 of 4)—seal insp/repl ● ILRT/no CD/425 days SU to SD

McGuire 2 (Cornelius, N.C.) 1129 PWR/W 7/5/89-9/12/89

● RF ● SGs (4 of 4)—EC, SL, cold leg shot peening ● SG nozzle dams & FOSAR ● RCP (1 of 4)—seal insp/repl ● ILRT ● DG lube oil syst upgrade ● EC of in-core thimbles/no CD/359 days SU to SD

Catawba 1 (Clover, S.C.) 1129 PWR/W 2/13/90-4/14/90

● RF ● HPT teardown & insp ● LPT teardown & insp (1 of 3) ● removal of UHI from reactor bldg ● SGs (4 of 4)—EC ● RCPs (4 of 4)—ISI of flywheels/no CD/327 days SU to SD

Catawba 2 (Clover, S.C.) 1129 PWR/W 6/11/90-8/12/90

● RF ● LPT teardown & insp (1 of 3) ● SGs (4 of 4)—SL/no CD/389 days SU to SD

**Duquesne Light Co.**

Braver Valley 1 (Shippingport, Pa.) 810 PWR/W 8/1/89—11/10/89

● RF ● SGs (2 of 3)—channel head beron & 100% EC ● containment type "A" test ● RCP motor OH (1 of 3) ● jet in gen OH ● DGs (2 of 2)—surv & PM ● erosion/corrosion exam of secondary syst ● RCP flywheel (1 of 3) ● 10-yr ISI ● relief valve testing ● snubber testing—large bore ● 10-yr ISI of primary & secondary piping ● repl of RTD bypass manifold ● type "B" and "C" testing/CD starts 8/2/89, 18 months SU to SD

Beaver Valley 2 (Shippingport, Pa.) 810 PWR/W None scheduled

**Florida Power & Light Co.**

Turkey Point 3 (Florida City, Fla.) 666 PWR/W info not received

Turkey Point 4 (Florida City, Fla.) 666 PWR/W info not received

St. Lucie 1 (Hutchinson Island, Fla.) 839 PWR/C-E 2/1/90, duration NYD

● RF ● incore thimble repl (6) ● incore instru repl ● ILRT ● SGs (2 of 2)—chem at 100% EC ● Westinghouse plug repl ● RCP motor CHO ● LPT insp (2 of 2) ● turb valve insp (4 of 16) ● HPT insp ● repl of containment coolers (4 of 4)/no CD/18 months SU to SU

St. Lucie 2 (Hutchinson Island, Fla.) 839 PWR/C-E 10/89, duration NYD

● RF ● incore thimble repair (1) ● SGs (2 of 2)—SL 100% EC ● LPT insp (2 of 2) ● turb valve insp (4 of 16) ● secondary piping repl/no CD/24 months SU to SU

**Florida Power Corp.**

Crystal River 3 (Red Level, Fla.) 821 PWR/B&W 3/90, about 10 wks

● gen stator repl ● RF ● SGs (2 of 2)—SL/water slap ● DG upgrade (2 of 2) ● HPT insp ● RCP seal insp (4 of 4) ● insp of RV welds (10-yr ISI) ● LLRT ● ILRT ● RCP insp (1 of 4)/CPNYD/NYD if CD/24 months SU to SD

**Georgia Power Co.**

Edwin I. Hatch 1 (Baxley, Ga.) 756 BWR/GE 3/90, about 13 wks

● RF ● incore/undervessel work ● ISI ● LLRT ● EQ PMs ● equip PM/CM ● RHR and core spray pump and motor insp and PM (3 of 6) ● recirc pump motor insp (2 of 2) ● HPT insp ● control valves and combined intercept valves insp ● MSR insp ● FWH repl (2 of 10)/CD starts 1/90/18 months SU to SU

Edwin I. Hatch 2 (Baxley, Ga.) 768 BWR/GE 9/1/89, about 10 wks

● RF ● incore/undervessel work ● ISI (completion of 10-yr cycle) ● LLRT ● Inspection & Enforcement Bulletin 85-03 MOV testing ● EQ PMs ● plant mods ● PM ● CM ● condenser tube & tubesheet repl ● LPT rotor repl (2 of 2) ● RHR & core spray pump & motor (3 of 6) insp & PM ● recirc pumps seal repl/CD started 4/15/89/18 months SU to SU

Vogtle 1 (Waynesboro, Ga.) 1079 PWR/W 2/23/90-4/9/90

● RF ● MSIV, main FW isolation valve, & atmospheric relief valve 5-yr inspections ● engineered safety features actuation system testing ● EQ 5-yr inspections ● ILRT ● ISI ● outlet nozzle insp ● snubber insp ● RV UT ● insp of RCP seals #1 & #4 ● SGs—SC & SL ● 1-yr RCP motor insp (4 of 4) ● main steam safety valve & pressurizer safety relief valve testing ● RCS hydrogen peroxide treatment ● combined intercept valve insp ● stop valve insp ● LPT insp (2 of 3) ● SG FW pump turb #A insp ● turb auxiliaries insp ● flux thimble EC ● DG #A 60-month insp ● DG #B 36-month insp ● 18-month DG surv ● rod control cluster assembly repl because of swelling ● rework of main gen current transformers ● repl of washers on DG #A/no CD/17 months SU to SU

Vogtle 2 (Waynesboro, Ga.) 1079 PWR/W 10/6/89-10/11/89

● snubber insp/no CD 9/14/90-11/3/90

● RF ● RV head flange insp ● irradiated specimen removal fr RV ● engineered safety features actuation system testing ● ISI ● snubber insp ● SGs—EC & SL ● insp of RCP seals #2 & #3 ● 1-yr RCP motor insp (4 of 4) ● main steam safety valve & pressurizer safety relief valve testing ● RCS hydrogen peroxide treatment ● control valve insp ● HPT insp ● TG insp ● field lead & retaining ring insp ● turb auxiliaries insp ● insp of SG FW pump turb #A ● flux thimble EC ● 18-month DG surv ● rod control cluster assembly repl because of swelling/CD starts 9/1/90/16 months SU to SU

**GPU Nuclear Corp.**

Oyster Creek 1 (Forked River, N.J.) 620 BWR/GE None scheduled

Three Mile Island 1 (Londonderry Twp., Pa.) 808 BWR/B&W 1/5/90, 45-50 days

● RF ● full core offload—177 of 177 ● ILRT ● repl of RCP seals (2 of 4) ● leak detection of fuel assemblies (177 of 177) ● SGs (2 of 2)—20% EC ● FW nozzle repl (60 of 60) ● shutdown cooler repl (1 of 2) ● turb valve repl ● heat sink protection syst upgrades ● safety performance improvement program mode (C) & PM ● plant mods/CD starts early December 1989/18 months SU to SD

**Gulf States Utilities Co.**

River Bend 1 (St. Francisville, La.) 936 BWR/GE Spring 1990, duration NYD

● general maint ● surv/CPNYD no CD

**Houston Lighting & Power Co.**

South Texas Project 1 (Palacios, Tex.) 1250 PWR/W 8/4/89, about 56 days

● RF ● CHO of bottom-mounted instru tubing under RV to heavier walled tubing ● SGs (4 of 4)—EC & SL ● turb warranty insp ● RCP seal CHO ● MCV testing ● LLRTs/CPNYD no CD/8 months SU to SD

4/90, about 7 wks

● RF ● surv ● LLRTs ● PMs/CPNYD/no CD 11 months SU to SD

South Texas Project 2 (Palacios, Tex.) 1250 PWR/W 11/4/89, about 2 wks

● insp of bottom-mounted instru under RV ● removal of main steam line strainers ● surv ● LLRTs/no CD

**Illinois Power Co.**

Clinton 1 (Clinton, Ill.) 930 BWR/GE NYD

**Indiana/Michigan Power Co.**

Donald C. Cook 1 (Bridgman, Mich.) 1020 PWR/W None scheduled

Donald C. Cook 2 (Bridgman, Mich.) 1060 PWR/W 12/2/89-12/4/89

● ice condenser surv ● lower inlet door surv/CD starts 12/1/89

**Iowa Electric Light & Power Co.**

Duane Arnold (Palo, Ia.) 515 BWR/GE 10/23/89, about 2-4 wks

● MSIV test ● BOP valve work/no CD 4/90, about 10-12 wks

● recirc pump internal repl ● RF ● LLRT ● ISI ● ILRT ● snubber testing ● HPT insp ● extraction steam piping repl/CD starts 2/90/18 months SU to SD



# PLANNED OUTAGES

	Net MWe	Reactor Type/Supplier	Estimated Outage Dates	
<b>Long Island Lighting Co.</b> Shoreham (Brookhaven, N.Y.)	809	BWR/GE	NYD	load center deenergization and cl • torus draindown, insp & painting • decon of recirc piping • SW and RBCCW maint & mods • containment ILRT/CD started 1/15/89 /512 days, SU to SD
<b>Louisiana Power &amp; Light Co.</b> Waterford 3 (Taft, La.)	1075	PWR/C-E	10/13/89, about 60 days	Prairie Island 1 (Red Wing, Minn.) 503 PWR/W 1/15/90, 32 days • RF* • SGs (2 of 2)—100% EC* • SG (1 of 2)—tube sleeving (about 100 tubes), hot leg only* • component cooler repairs (1 of 2)* • reactor head adapter* • LPT insp (2 of 2) • ChO of FW controls • ATWS mod • ChO of MOV actuators (about 23) • RCP seal ChO (1 of 2)/CD planned, start date NYD/470+ days SU to SD
<b>Maine Yankee Atomic Power Co.</b> Maine Yankee (Wiscasset, Me.)	810	PWR/C-E	5/12/90, about 9 wks	Prairie Island 2 (Red Wing, Minn.) 500 PWR/W None scheduled
<b>Nebraska Public Power District</b> Cooper (Brownville, Neb.)	764	BWR/GE	3/4/90-4/14/90	<b>Omaha Public Power District</b> Fort Calhoun 1 (Fort Calhoun, Neb.) 478 PWR/C-E 2/15/90, about 12 wks • RF • repl of 1st stage buckets on HPT • gen OH/insp • SGs (2 of 2)—SL EC, plugging as required • containment ILPT • emergency DG OH (2 of 2)—no CD/18 months SU to SU
<b>New Hampshire Yankee</b> Seabrook 1 (Seabrook, N.H.)	1,150	PWR/W	NYD	<b>Pacific Gas &amp; Electric Co.</b> Diablo Canyon 1 (Avila Beach, Calif.) 1073 PWR/W 10/15/89, 63 days • RF* • RCP motor viscosity pump mod & seal repl (4 of 4) • LPT rotor repl (1 of 3) • main gen winding improvement module install (1 of 1) • SGs (4 of 4)—EC/no CD/14 months SU to SD Diablo Canyon 2 (Avila Beach, Calif.) 1087 PWR/W 2/16/90, 63 days • RF* • LPT rotor repl (1 of 2) • ILRT • SGs (4 of 4)—EC • other work being defined/no CD/16 months SU to SD
<b>New York Power Authority</b> Indian Point 3 (Indian Point, N.Y.)	965	PWR/W	NYD	<b>Pennsylvania Power &amp; Light Co.</b> Susquehanna 1 (Berwick, Pa.) 1032 BWR/GE None scheduled Susquehanna 2 (Berwick, Pa.) 1038 BWR/GE 9/9/89-11/10/89 • RF (fuel offload is critical path) • repl of 20 LPRMs* • RHR control room panel repl (2 of 2)* • ILRT* • repl of 24 CRDs • TG insp • loss of offsite power mod (2 of 2) • App R mods • 125-V DC battery repl (2 of 2) • dry-well cooling mod • FW piping alignment/no CD/16 months SU to SD
<b>Niagara Mohawk Power Corp.</b> Nine Mile Point 1 (Scriba, N.Y.)	610	BWR/GE	None scheduled	<b>Philadelphia Electric Co.</b> Peach Bottom 2 (Peach Bottom, Pa.) 1051 BWR/GE 3/1/90-3/21/90 • LLRTs, incl MSIVs* • 200 surv tests (75%—80% I&C) • minor maint/CPNYD/no CD Peach Bottom 3 (Peach Bottom, Pa.) 1035 BWR/GE 3/31/87-9/30/89 • (received NRC SD order 3/31/87) • MOV return* • PM backlog reduction* • CRD exchange • extensive mods • primary system pipe repl & testing • electrical distribution syst upgrade • RF
<b>Northeast Utilities</b> Millstone 1 (Waterford, Conn.)	654	BWR/GE	None scheduled	Limerick 1 (Pottstown, Pa.) 1055 BWR/GE None scheduled Limerick 2 (Pottstown, Pa.) 1055 BWR/GE None scheduled
<b>Northern States Power Co.</b> Monticello (Monticello, Minn.)	536	BWR/GE	8/19/89-11/5/89	<b>Portland General Electric Co.</b> Trojan (Prescott, Ore.) 1095 PWR/W 4/5/90, 75 days • RF • ILRT/10 months SU to SD
<b>Public Service Company of Colorado</b> Fort St. Vrain (Platteville, Colo.)	330	HTGR/GA	None scheduled	<b>Public Service Electric &amp; Gas Co.</b>

Salem 1 (Salem, N.J.)	1106	PWR/W	None scheduled	• thermal shield insp*/no CD
Salem 2 (Salem, N.J.)	1106	PWR/W	3/31/90, 45 days	San Onofre 2 (San Clemente, Calif.) 1070 PWR/C-E 9/30/89-12/5/89
• RF* • SGs (4 of 4)—tube plug replacements (PCP) • inverter repl (4 of 4) (PCP) • selected SW pipe repl • main steam flow nozzle design change (4 of 4)/no CD/18 months SU to SD				• RF* • incore instru & heated junction thermocouple RV head water level indicator • repl* • CR human factor design change • ATWS mod • routine turb OH/no CD/553 days SU to SD
Hope Creek 1 (Salem, N.J.)	1067	BWR/GE	9/16/89, 50 days	San Onofre 3 (San Clemente, Calif.) 1080 PWR/C-E 4/1/90-6/6/90
• RF* • ChD of 1 LPT* • SW pipe mods • OH of DGs (4 of 4) • rebuild/repl of 25 CRDs • ILRT NYD if CD/18 months SU to SD				• RF* • incore instru & heated junction thermocouple RV head water level indicator • repl* • CR human factors design change • ATWS mod • routine turb OH/no CD/553 days SU to SD
<b>Rochester Gas &amp; Electric Corp.</b>				<b>System Energy Resources, Inc. (Subsidiary of Middle South Utilities)</b>
Robert E. Ginna (Ontario, N.Y.)	470	PWR/W	3/1/90-4/15/90	Grand Gulf 1 (Port Gibson, Miss.) 1142 BWR/GE None scheduled
• SGs* (2 of 2)—EC & sleeving • RF • RCP motor repl & seal maint (1 of 2) • repl of HP FWHS (2 of 2) • LPT major OH (1 of 2)/CD starts 2/15/90/10 months SU to SD				<b>Tennessee Valley Authority</b>
<b>Sacramento Municipal Utility District</b>				Browns Ferry 1 (Decatur, Ala.) 1065 BWR/GE None scheduled
Rancho Seco (Clay Station, Calif.)	873	PWR/B&W	9/15/89-12/31/89	• (unit SD 3/85 for recovery program; still in layup status)
• RF* • OH of 2 RCPs* • RV internal bolting repl* • LPT repl • repl of MFWP control syst • upgrade of fuel handling/transfer syst • install of RV level indicating syst • repl of extraction piping • SG EC/no CD 18 months SU to SD				Browns Ferry 2 (Decatur, Ala.) 1065 BWR/GE None scheduled
(Above information received before June 6 shutdown referendum.)				• (unit SD 9/84 for regular RF outage; stayed SD as part of recovery program; restart schedule being evaluated)
<b>South Carolina Electric &amp; Gas Co.</b>				Browns Ferry 3 (Decatur, Ala.) 1065 BWR/GE None scheduled
Virgil C. Summer 1 (Parr, S.C.)	885	PWR/W	NYD	• (unit SD 3/85 for recovery program; still in layup status)
<b>Southern California Edison and San Diego Gas &amp; Electric Co.</b>				Sequoyah 1 (Soddy-Daisy, Tenn.) 1148 PWR/W 4/2/90-6/10/90
San Onofre 1 (San Clemente, Calif.)	436	PWR/W	9/90, duration NYD	• RF • ChD of component cooling syst HE (1 of 3) • install of ATWS mitigation syst • implementation of post-accident monitoring instru (Reg Guide 1.97) • layout CRDR mods • repl of RPS with Westinghouse Eagle 21 syst • repl of UHI per App K • removal of boron injection tank/CPNYD/CD starts 3/19/90 532 days SU to SD; not incl 15-day ice weigh outage in 1991
				Sequoyah 2 (Soddy-Daisy, Tenn.) 1148 PWR/W 3/5/90-3/13/90
				• insp of ice condenser flow passages*/no CD

Continued

## Abbreviations used in this table

App J: 10CFR50, Appendix J, "Reactor Containment Leakage Testing for Water-Cooled Power Reactors"  
 App R: 10CFR50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979"  
 ART: alternate rod insertion  
 ATWS: anticipated transient without scram  
 aux: auxiliary  
 AVB: antivibration bar  
 B&W: Babcock & Wilcox Co.  
 bd: bond  
 BF: backfits  
 bldg: building  
 BOP: balance of plant  
 BWR: boiling water reactor  
 cal.b: calibration  
 CCCW: closed cooling water system  
 CCW: component cooling water  
 CD: coastdown  
 C-E: Combustion Engineering, Inc.  
 CEA: control element assembly  
 CEDM: control element drive mechanism  
 chem: chemistry  
 chem cl: chemical cleaning  
 ChO: changeout  
 CIV: containment isolation valve  
 cl: cleaning  
 CM: corrective maintenance  
 CP: condensate pump  
 CPI: critical path impact  
 CPNYD: critical path not yet determined  
 CR: control room  
 CRD: control rod drive  
 CRDR: control room design review  
 CRGT: control rod guide tubes  
 CWP: circulating water pump  
 CWS: circulating water system  
 DCRDR: detailed control room design

review  
 decon: decontamination  
 DER: digital electrical hydraulic system  
 DG: diesel generator  
 DHRS: decay heat removal system  
 EC: eddy current testing  
 ECCS: emergency core-cooling system  
 EECW: emergency equipment cooling water  
 EFPD: effective full-power days  
 EHC: electrical hydraulic control system  
 EMRV: electromagnetic relief valve  
 EQ: environmental qualification equip: equipment  
 ERFIS: emergency response facility information system  
 exam: examination  
 FOSAR: foreign object search and retrieval  
 FP: fire protection  
 FW: feedwater  
 FWH: feedwater heater  
 GA: General Atomics  
 GE: General Electric Co.  
 gen: generator  
 Gen Ltr: Generic Letter  
 gp: group  
 HE: heat exchanger  
 HEPA: high-efficiency particulate (filter)  
 HP: high pressure  
 HPCI: high-pressure coolant injection system  
 HPT: high-pressure turbine  
 HT: heat treatment  
 HTGR: high-temperature gas-cooled reactor  
 HVAC: heating, ventilating, and air conditioning  
 hydro: hydrostatic pressure test  
 I&C: instrumentation and control  
 I&M: inspection and maintenance

IAW: in accordance with  
 IGSCC: intergranular stress corrosion cracking  
 IHST: induction heating stress improvement  
 ILRT: integrated leak rate testing incl: including  
 insp: inspection  
 install: installation  
 instru: instrumentation  
 IP: intermediate pressure  
 IPT: intermediate pressure turbine  
 IRM: intermediate range monitor  
 ISI: inservice inspection  
 ILRT: ice leak rate testing  
 LP: low pressure  
 LPHM: low-power range monitor  
 LPS: low-pressure safety injection system  
 LPT: low-pressure turbine  
 main gen: main generator  
 M&M: maintenance  
 MFWP: main feedwater pump  
 mods: modifications  
 MOV: motor-operated valve  
 MSIV: main steam isolation valve  
 MSR: moisture separator reheater  
 MSRV: main steam relief valve  
 NDE: nondestructive examination  
 NIS: nuclear information system  
 NSSS: nuclear steam supply system  
 NYD: not yet determined  
 OCNYD: operating cycle not yet determined  
 OH: overhaul  
 PCP: potential critical path  
 PIP: control rod position indication probe  
 PM: preventive maintenance  
 PORV: power-operated relief valve  
 PPC: pressure pulse cleaning  
 PPS: plant protection system  
 prog: program  
 PWR: pressurized water reactor  
 Q: quarter  
 rad: radiation  
 RBCCW: reactor building closed cooling water system  
 RBCW: reactor building chilled water system

RCIC: reactor core isolation cooling system  
 RCC: reactor coolant pump  
 RCS: reactor coolant system  
 recert: recertification  
 recirc: recirculation  
 refurb: refurbishment  
 Reg Guide: Regulatory Guide  
 repl: replacement  
 reqs: requirements  
 RF: refueling  
 RHR: residual heat removal system  
 RPS: reactor protection system  
 RPV: reactor pressure vessel  
 RTD: resistance temperature detector  
 RV: reactor vessel  
 RVLIS: reactor vessel level instrumentation system  
 RW: reactor water cleanup  
 SAS: safety assessment system  
 S&LC: standby liquid control system  
 SD: shutdown  
 SG: steam generator  
 SI: safety injection  
 SIWT: safety injection water tank  
 SL: sludge lining  
 SLCS: standby liquid control system  
 SP: spill pin  
 SPDS: safety parameter display system  
 SpFP: spent-fuel pool  
 SRM: source range monitor  
 SRV: safety relief valve  
 SSI: secondary side inspection  
 SSW: standby service water  
 SU: startup  
 surv: surveillance testing  
 SW: service water  
 SWS: service water system  
 syst: system  
 tech specs: technical specifications  
 TG: turbine generator  
 TMI: Three Mile Island  
 TPCW: turbine plant cooling water  
 turb: turbine  
 UHI: upper head injection system  
 UT: ultrasonic testing  
 W: Westinghouse Electric Corp.  
 wk: week  
 yr: year

# PLANNED OUTAGES

	Nat MWe	Reactor Type/ Supplier	Estimated Outage Dates	
<b>Texas Utilities Electric Co.</b> Comanche Peak 1 (Glen Rose, Tex.)	1150	PWR/W	None scheduled	• RF • removal/insp of 1 LPT rotor • mod of 4 remaining MSIV piston/disc assemblies • insp/OH of 2nd reactor FW turb • draindown/insp/repair of standby SW spray pond support structure, regarding corrosion damage/ plant mods/CPNYD/no CD/10 months SU to SD
<b>Toledo Edison Co.</b> Davis-Besse 1 (Oak Harbor, Ohio)	860	PWR/B&W	2/1/90-6/15/90	• addition of a portable, 3rd DG to existing 2 DGs for station blackout backup • coordinated control syst'—simplification & improvement of integrated control syst • RF • App A FP mods • B&W owners gp multiple mods—safety & performance improvement program/no CD/15 months SU to SD
<b>Union Electric Co.</b> Callaway (Fulton, Mo.)	1150	PWR/W	None scheduled	
<b>Vermont Yankee Nuclear Power Corp.</b> Vermont Yankee (Vernon, Vt.)	504	BWR/GE	None scheduled	
<b>Virginia Power Co.</b> Surry 1 (Gravel Neck, Va.)	781	PWR/W	None scheduled	
Surry 2 (Gravel Neck, Va.)	781	PWR/W	None scheduled	
North Anna 1 (Mineral, Va.)	915	PWR/W	None scheduled	
North Anna 2 (Mineral, Va.)	915	PWR/W	None scheduled	
<b>Washington Public Power Supply System</b> WNP-2 (Richland, Wash.)	1095	BWR/GE	4/15/90-8/15/90	
<b>Wisconsin Electric Power Co.</b> Point Beach 1 (Two Creeks, Wis.)	485	PWR/W	4/6/90-5/25/90	• RF/CPNYD
Point Beach 2 (Two Creeks, Wis.)	485	PWR/W	9/22/89-11/17/89	
<b>Wisconsin Public Service Corp.</b> Kewaunee (Carlton, Wis.)	503	PWR/W	3/3/90-4/1/90	• SGs* (2 of 2)--ED tube sleeving as necessary • RF • ILRT • install of chevron separators in 2 moisture separators • insp of RCP seats (1 of 2) • ChD of station batteries (2 of 2) • repl of insulation on 4160-V-type non-safety buses • SD
<b>Wolf Creek Nuclear Operating Corp.</b> Wolf Creek (Burlington, Kans.)	1128	PWR/W	3/15/90, about 60 days	• RF/CPNYD/no CD/16 months SU to SD
<b>Yankee Atomic Electric Co.</b> Yankee (Rowe, Mass.)	167	PWR/W	6/23/90-8/18/90	• RF/CPNYD/CD starts about 4/20/90 /16 months SU to SU

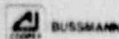
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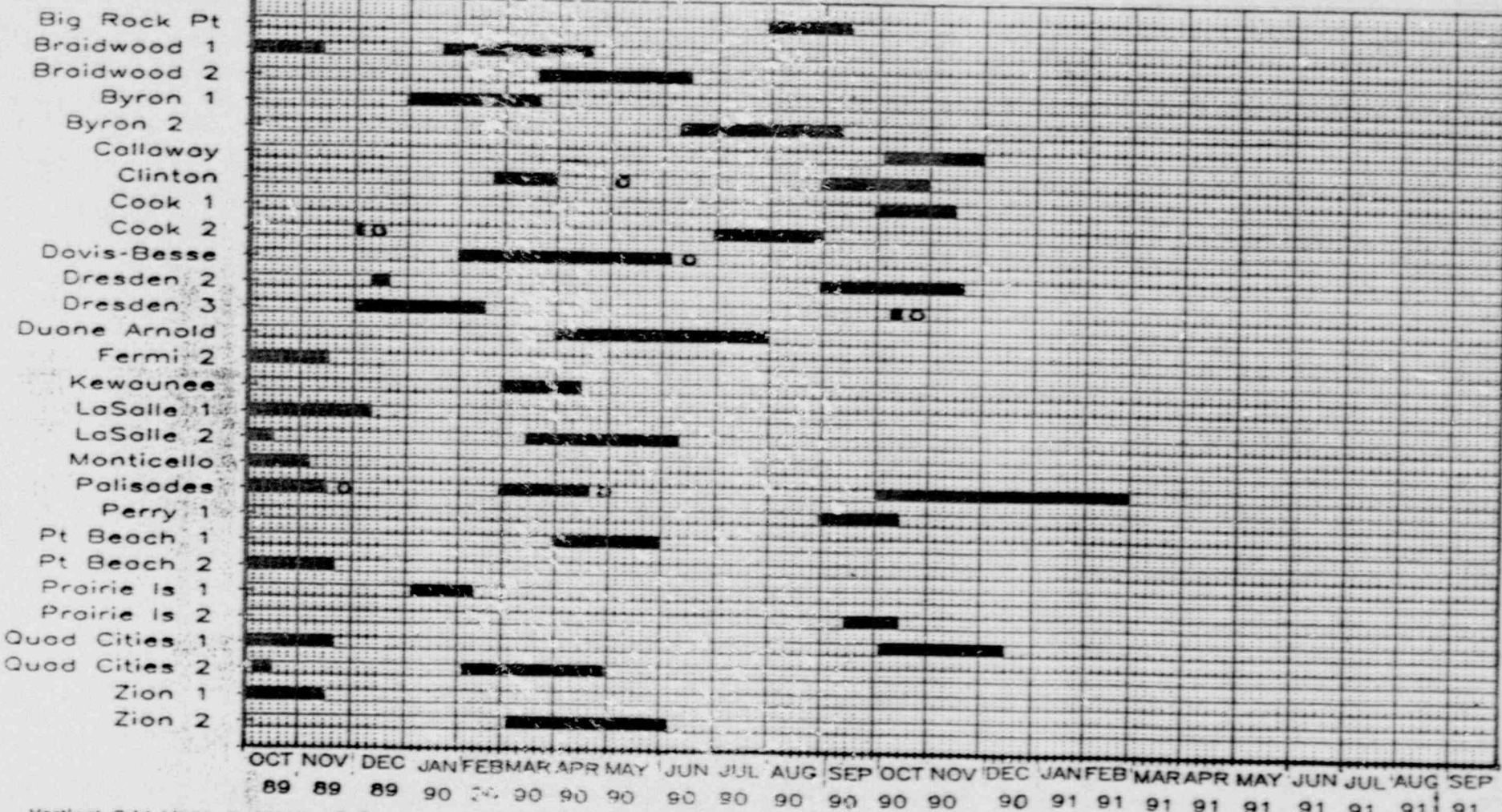


OCT 27 1989, REVI

# TENTATIVE \* RIII REACTOR OUTAGE SCHEDULE As Of OCTOBER 19, 1989

CHART BY: L. SUCHARSKI, DRP:TSS

\* ALL DATES SUBJECT TO CHANGE.



Vertical Grid Lines - Approx. 5 Days.  
o - NON-REFUELING OUTAGES.

A/2

R/D

OCT 27 1989, REV 1

ATTACHMENT

OUTAGES

The following is a list of the upcoming refueling outages (unless otherwise noted) as depicted in the 1989 3rd quarter Resident Inspector Monthly Status Reports,

<u>FACILITY</u>	<u>DATES</u>		<u>NOTES</u>
Big Rock Point	Jun 9, 1989	- Aug 13, 1989	--
Big Rock Point	Aug 1, 1990	- Sep 15, 1990	--
Braidwood 1	Sep 5, 1989	- Nov 10, 1989	--
Braidwood 1	Jan 21, 1990	- Apr 21, 1991	--
Braidwood 2	Mar 19, 1990	- Jun 17, 1990	--
Byron 1	Jan 1, 1990	- Mar 19, 1990	--
Byron 2	Jun 11, 1990	- Sep 9, 1990	--
Callaway	Oct 4, 1990	- Nov 30, 1990	--
Clinton	Sep 1, 1990	- Oct 31, 1990	--
Clinton	Feb 26, 1990	- Mar 30, 1990	--
D. C. Cook 1	Mar 18, 1989	- Jun 15, 1989	--
D. C. Cook 1	Oct 1, 1990	- Nov 15, 1990	--
D. C. Cook 2	Dec 2, 1989	- Dec 5, 1989	-- Other
D. C. Cook 2	Jul 1, 1990	- Aug 31, 1990	--
Davis-Besse	Feb 2, 1990	- Jun 5, 1990	--
Dresden 2	Dec 11, 1989	- Dec 18, 1989	-- Other
Dresden 2	Sep 3, 1990	- Nov 20, 1990	--
Dresden 3	Dec 2, 1989	- Feb 15, 1990	--
Dresden 3	Oct 9, 1990	- Oct 16, 1990	-- Other
Duane Arnold	Apr 1, 1990	- Jul 30, 1990	--
Duane Arnold	Sep 15, 1989	- Oct 15, 1989	--
Fermi 2	Sep 2, 1989	- Nov 16, 1989	--
Kewaunee	Mar 1, 1990	- Apr 15, 1990	--
LaSalle 1	Sep 15, 1989	- Dec 10, 1989	--
LaSalle 2	Aug 25, 1989	- Oct 14, 1989	--
LaSalle 2	Mar 17, 1990	- Jun 10, 1990	--
Monticello	Aug 19, 1989	- Nov 5, 1989	--
Palisades	Oct 1, 1989	- Nov 15, 1989	-- S/G
Palisades	Mar 2, 1990	- Apr 20, 1990	-- S/G
Palisades	Oct 1, 1990	- Feb 27, 1991	--
Perry	Sep 1, 1990	- Oct 15, 1990	--
Point Beach 1	Apr 1, 1990	- May 28, 1990	--
Point Beach 2	Sep 22, 1989	- Nov 17, 1989	--
Prairie Island 1	Jan 3, 1990	- Feb 7, 1990	--
Prairie Island 2	Sep 14, 1990	- Oct 14, 1990	--
Quad Cities 1	Sep 10, 1989	- Nov 20, 1989	--
Quad Cities 1	Oct 6, 1990	- Dec 16, 1990	--
Quad Cities 2	Oct 7, 1989	- Oct 13, 1989	--
Quad Cities 2	Feb 3, 1990	- Apr 30, 1990	--
Zion 1	Sep 7, 1989	- Nov 14, 1989	--
Zion 2	Mar 5, 1990	- Jun 4, 1990	--



REG 1

13

SCHEDULED REFUELING MAINTENANCE OUTAGES, REVISED - 11/01/89

PLANT	REF. NO. (M/S)	REF. START DATE	APPROX. OUTAGE LENGTH (WEEKS)	1989			1990											
				NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV		
BEAVER VAL 1 (P)	15	09/01/89	10															
BEAVER VAL 2 (P)	15	03/17/89	8															
CALVERT CL 1 (P)	18	04/08/88	7															
CALVERT CL 2 (P)	24	04/89	6															
*FITZPATRICK (B)	18	03/31/90	7															
GINNA (P)	12	03/17/90	4					XX	XXXX	XX								
*HADDAM NECK (P)	15	09/09/89	17	XXXX	XXXX	X			XX									
HOPE CREEK	18	09/14/89	7	X														
INDIAN PT 2 (P)	18	03/15/89	11															
INDIAN PT 3 (P)	18	09/15/90	10															
LIMERICK 1 (B)								XXX							XX	XXXX	XXXX	
MAINE YANKEE (P)	18	05/15/90	8								XX	XXXX						
MILLSTONE 1 (B)	18	04/01/89	6															
MILLSTONE 2 (P)	12	02/04/89	8															
MILLSTONE 3 (P)	18	05/20/89	8															
NINE MI PT 1 (B)	24	12/87																
NINE MI PT 2 (B)		10/01/88	4															
OYSTER CRK 1 (B)	18	10/01/88	12					XXXX	XX									
PEACH BTM 2 (B)	18	03/01/90	3															
PEACH BTM 3 (B)	18	09/01/87																
PILGRIM 1 (B)	18	03/01/91	12															
SALEM 1 (P)	12																	
SALEM 2 (P)	18	03/31/90	6															
SEABROOK (P)	18									XXXX	XX							
SHOREHAM (B)																		
SUSQUEHANNA 1 (B)	18																	
SUSQUEHANNA 2 (B)	18	09/09/89	8															
THREE MI IS 1 (P)	12	01/05/90	7				XXXX	XXX										
*VT YANKEE (B)	18	09/01/90	6															
*YANKEE ROWE (P)	18	06/23/90	7									XXXX	XX		XXXX	XX		

\* DENOTES CHANGES THIS REVISION  
X = ONE WEEK

NOTE: THIS SCHEDULE WILL BE ISSUED ON A MONTHLY BASIS.  
TO UPDATE SEND CHANGES TO JOYCE DOUGLAS.

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REG II

AC

PLANT NAME	ACTIVITY / INSPECTION	RESP	SIZE	ACTIVITY / INSPECTION	ACTIVITY / INSPECTION
		SEC.	OF	START DATE	COMP. DATE
=====	=====	=====	=====	=====	=====
** SECTION = OUTG					
HARRIS	REFUELING OUTAGE	OUTG	0	10/21/89	12/09/89
OCOONEE	U-3 REFUELING OUTAGE	OUTG	0	11/08/89	12/23/89
HATCH	U-2 100-DAY OUTAGE	OUTG	0	09/06/89	12/25/89
BRUNSWICK	U-2 REFUELING OUTAGE	OUTG	0	09/09/89	02/09/90
NORTH ANNA	U-2 PUMP/STUBBER OUTAGE	OUTG	0	02/23/90	03/20/90
CATAWBA	U-2 REFUELING OUTAGE	OUTG	0	01/26/90	04/01/90
SURRY	U-2 REFUELING OUTAGE	OUTG	0	02/01/90	04/01/90
VOGTLE	U-2 REFUELING OUTAGE	OUTG	0	02/23/90	04/09/90
MCGUIRE	U-2 REFUELING OUTAGE	OUTG	0	03/01/90	05/01/90
ROBINSON	U-2 REFUEL OUTAGE (TENTATIVE)	OUTG	0	04/01/90	05/30/90
OCOONEE	U-1 REFUELING OUTAGE	OUTG	0	04/22/90	06/06/90
HATCH	U-1 REFUELING OUTAGE	OUTG	0	02/17/90	06/07/90
CRYSTAL RIVER	REFUELING OUTAGE (90 DAY)	OUTG	0	03/14/90	06/15/90
SUMMER	REFUELING OUTAGE	OUTG	0	05/01/90	07/01/90
CATAWBA	U-2 REFUELING OUTAGE	OUTG	0	06/01/90	08/01/90
BRUNSWICK	U-1 REFUELING OUTAGE	OUTG	0	06/01/90	09/30/90
OCOONEE	U-2 REFUELING OUTAGE	OUTG	0	09/01/90	11/01/90
VOGTLE	U-2 REFUELING OUTAGE	OUTG	0	09/14/90	11/03/90
NORTH ANNA	U-2 REFUELING 10 YR ISI	OUTG	0	09/07/90	11/21/90
SURRY	U-1 REFUELING OUTAGE	OUTG	0	12/01/90	02/01/91
SURRY	U-2 REFUELING OUTAGE	OUTG	0	02/01/91	04/01/91
NORTH ANNA	U-1 REFUELING OUTAGE	OUTG	0	03/08/91	05/08/91

AW

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Cleveland, Ohio 44101  
218/861-9000

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312/294-4321

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Hartford, Connecticut 06141  
203/267-2556

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212/460-4600

Consumers Power Company  
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517/788-0550

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Detroit, Michigan 48226  
313/237-8000

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704/373-4011

Duquesne Light Company  
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412/393-6000

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Miami, Florida 33102  
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A/S



GPU Nuclear Corporation  
Oyster Creek Nuclear Station  
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Forked River, New Jersey 08731  
609/971-4020

GPU Nuclear Corporation  
Three Mile Island Station  
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Middletown, Pennsylvania 17057  
717/948-8197

Gulf States Utilities Company  
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Beaumont, Texas 77704  
409/838-6631

Houston Lighting & Power Co.  
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Houston, Texas 77001  
713/228-9211

Illinois Power Company  
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Decatur, Illinois 62525  
217/424-7000

Indiana & Michigan Electric Co.  
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Bridgeman, Michigan 49106  
616/465-5901

Iowa Electric Light & Power Company  
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Cedar Rapids, Iowa 52406  
319/398-4411

Long Island Lighting Company  
250 Old Country Road  
Hicksville, New York 11801  
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Louisiana Power & Light Company  
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New Orleans, Louisiana 70174  
504/366-2345

Maine Yankee Atomic Power Company  
83 Edison Drive  
Augusta, Maine 04336  
207/622-4868

Nebraska Public Power District  
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Columbus, Nebraska 68601  
402/564-8561

Niagara Mohawk Power Corporation  
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Syracuse, New York 13202  
315/474-1511

Northeast Nuclear Energy Company  
P.O. Box 270  
Hartford, Connecticut 06141  
203/447-1791

Northern States Power Company  
414 Nicollet Mall  
Minneapolis, Minnesota 55401  
612/330-6007

Omaha Public Power District  
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Omaha, Nebraska 68102  
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San Francisco, California 94106  
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Philadelphia Electric Company  
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Philadelphia, Pennsylvania 19101  
215/841-4122

Portland General Electric Company  
121 Southwest Salmon Street  
Portland, Oregon 97204  
503/226-8333

Power Authority of the State of N.Y.  
10 Columbus Circle  
New York, New York 10019  
212/468-2000

Public Service Company of Colorado  
550 15th Street  
Denver, Colorado 80202  
303/571-7511

Public Service Electric & Gas Company  
80 Park Plaza  
Newark, New Jersey 07101  
201/430-7000

Rochester Gas & Electric Corporation  
89 East Avenue  
Rochester, New York 14649  
716/546-2700

Sacramento Municipal Utility District  
14440 Twin Cities Road  
Herald, California 95638  
916/452-3211

South Carolina Electric & Gas Company  
P.O. Box 764  
Columbia, South Carolina 29218  
803/748-3000

Southern California Edison Company  
2244 Walnut Grove Avenue  
Rosemead, California 91770  
818/302-1212

Systems Energy Resources, Inc.  
P.O. Box 1640  
Jackson, Mississippi 39205  
601/969-2311

Tennessee Valley Authority  
400 W. Summit Hill Drive  
Knoxville, Tennessee 37902  
615/632-6000

Toledo Edison Company  
300 Madison Avenue  
Toledo, Ohio 43652  
419/259-5000

Union Electric Company  
P.O. Box 149  
St. Louis, Missouri 63166  
314/621-3222

Vermont Yankee Nuclear Power Corp.  
P. O. Box 157  
Vernon, Vermont  
802/257-7711

Virginia Electric & Power Company  
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Richmond, Virginia 23261  
804/771-3000

Washington Public Power Supply System  
P.O. Box 968  
Richland, Washington 99352  
509/372-5000

Wisconsin Electric Power Company  
231 West Michigan Street  
Milwaukee, Wisconsin 53201  
414/755-2321

Wisconsin Public Service Corporation  
P. O. Box 19002  
Green Bay, Wisconsin 54307  
414/433-1598

Wolf Creek Nuclear Operating Company  
P.O. Box 411  
Burlington, Kansas 67201  
316/261-6611

Yankee Atomic Electric Company  
580 Main Street  
Bolton, Massachusetts 01740-1398  
413/625-6140

UTILITIES WITH PERMITS TO BUILD NUCLEAR POWER PLANTS

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215/841-4122

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Manchester, New Hampshire 03105  
603/669-4000

Systems Energy Resources, Inc.  
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601/969-2311

Tennessee Valley Authority  
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Knoxville, Tennessee 37902  
615/632-6000

Texas Utilities Electric Company  
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Granburg, Texas 76048  
817/897-8500

Washington Public Power Supply System  
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