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U.S. Nuclear Power Plant Operating Cost and Experience Summaries

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Abstract

The *U.S. Nuclear Power Plant Operating Cost and Experience Summaries (*NUREG/CR-6577, Supp. 2) report has been prepared to provide historical operating cost and experience information on U.S. commercial nuclear power plants during 2000–2001. Costs incurred after initial construction are characterized as annual production costs, which represent fuel and plant operating and maintenance expenses, and capital expenditures related to facility additions/modifications, which are included in the plant capital asset base. As discussed in the report, annual data for these two cost categories were obtained from publicly available reports and must be accepted as having different degrees of accuracy and completeness. Treatment of inconclusive and incomplete data is discussed.

As an aid to understanding the fluctuations in the cost histories, operations summaries for each nuclear unit are provided. The intent of these summaries is to identify important operating events; refueling, major maintenance, and other significant outages; operating milestones; and significant licensing or enforcement actions. Information used in the summaries is condensed from operating reports submitted by the licensees, the Nuclear Regulatory Commission (NRC) database for enforcement actions, and outage reports.

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Acronyms

ABB	Asea Brown Boveri
ac	alternating current
ADS	automatic depressurization system
AFW	auxiliary feedwater
AIT	Augmented Inspection Team
ANO	Arkansas Nuclear One
APRM	average power range monitor
ASP	Accident Sequence Precursor
BWR	boiling water reactor
BWST	borated water storage tank
CEA	control element assembly
CRD	control rod drive
CS	core spray
CVCS	chemical and volume control system
CW	circulating water
dc	direct current
DG	diesel generator
ECCS	emergency core cooling system
EDG	emergency diesel generator
EFW	emergency feedwater
EHC	electrohydraulic control
EIA	Energy Information Administration
ESF	engineered safety feature
FA	fuel assembly
FERC	Federal Energy Regulatory Commission
FP	fire protection
FSAR	Final Safety Analysis Report
FW	feedwater
GE	General Electric Company
HEPA	high efficiency particulate absolute
HHSI	high head safety injection
HPCI	high pressure coolant injection
HPCS	high pressure core spray
HPI	high pressure injection
HPSI	high pressure safety injection
HX	heat exchanger
I&C	instrumentation and control
INEEL	Idaho National Engineering and Environmental Laboratory
IPE	individual plant examination
LBLOCA	large-break loss-of-coolant accident
LCO	limiting condition for operation
LER	licensee event report
LOCA	loss-of-coolant accident
LOSP	loss of off-site power
LPCS	low pressure core spray
LPSI	low pressure safety injection
LWR	light water reactor
MDC	maximum dependable capacity
MFW	main feedwater
MOV	motor-operated valve
MS	main steam
MSIV	main steam isolation valve
MSL	main steam line
MSR	moisture separator reheater
MSVR	main steam valve room
MVA	megavolt ampere
MWe	megawatt (electric)
NPSH	net positive suction head
NRC	Nuclear Regulatory Commission
ORNL	Oak Ridge National Laboratory
PORV	power-operated relief valve
psig	pounds per square inch gauge
PVC	polyvinyl chloride
PWR	pressurized water reactor
QA	quality assurance
RCIC	reactor core isolation cooling
RCP	reactor coolant pump
RCS	reactor coolant system
RHR	residual heat removal
RO	reactor operator
RPS	reactor protection system
RPV	reactor pressure vessel
RRCS	reactor recirculation cooling system
RV	reactor vessel
RWCU	reactor water cleanup (system)
RWST	reactor water storage tank
SBGT	standby gas treatment
SBLC	standby liquid control
SBLOCA	small-break loss-of-coolant accident
SCSS	Sequence Coding and Search
SG	steam generator
SGTR	steam generator tube rupture
SGTS	standby gas treatment system
SI	safety injection
SRO	senior reactor operator
SRV	safety relief valve
SW	service water
TDAFW	turbine-driven auxiliary feedwater
TS	Technical Specification
UE	Unusual Event
UPS	uninterruptible power supply
USQ	unreviewed safety question
W	Westinghouse

Acknowledgements

The authors wish to thank Joe Cletcher and Debbie Queener for development of the database applications for collection of the operating experience information and preparation of the database report formats. The authors also wish to thank Joyce Echols for her support in organizing this summary document in NUREG format. In addition, the authors express their appreciation to Dr. Ronald Uleck, Technical Monitor, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, for his insight and guidance.

Glossary

Nameplate rating	The nameplate power designation [gross megawatt (electrical) MWe)] of the generator in megavolt amperes (MVA) multiplied by the nameplate rating power factor of the generator. Note: The nameplate rating of the generator may not be indicative of the maximum or dependable capacity, because other items of equipment of lesser rating, (e.g., the turbine) may limit unit output.
MDC	Maximum Dependable Capacity (MWe)
MDC net (MWe)	MDC Gross output less the normal station service loads (MWe)
Cumulative availability factor	$\frac{\text{Unit available hours} \times 100}{\text{Lifetime period hours}}$
Cumulative Capacity Factor (MDC Net)	$\frac{\text{Net electrical energy generated} \times 100}{\text{Lifetime hours} \times \text{MDC Net}}$
Cumulative forced outage rate	$\frac{\text{Cumulative forced outage hours} \times 100}{\text{Cumulative unit service hours + forced outage hours}}$
Appendix R (of 10 CFR 50)	NRC's Fire Protection (FP) Regulations
Production cost	Costs for operations and maintenance (O&M) and fuel expense.
Capital additions cost	Cost for major replacement items, such as a steam generator or turbine or costs for refurbishment of equipment, such as replacement of blades in a turbine. The economic basis for these costs is detailed in the *Introduction* (pages 1-2).

Introduction

Compiled by the Oak Ridge National Laboratory (ORNL), this report presents results of an analysis of historical operating cost and experience information on U.S. commercial nuclear power plants. The work was sponsored by the NRC's Office of Nuclear Reactor Regulation's Division of Regulatory Improvement Programs and provides the second supplement to the operating cost and experience information prepared for and submitted to the NRC in October 1997 and published in February 1998 (NUREG/CR-6577).

This report summarizes costs and operating experience for all operational U.S. nuclear plants during 2000-2001. Also included are tabular data for 11 nuclear units that have ceased operations. Historical operations and cost data for units not included in this report can be found in the 1998 publication of this report, or in Supplement 1 published in January 2001. The U.S. operational nuclear plants detailed in this report are shown in Table 1, which contains unit summary information through December 2001. Table 2 provides summary details for units that have been permanently shut down or decommissioned. In the cost and experience section of this report, graphs of historical annual production costs (i.e., operations, maintenance, and fuel costs) and capital additions costs are presented in 2001 dollars followed by a unit-by-unit operating experience summary. In the majority of cases, cost data are only available on a total plant (rather than unit) basis. In a few cases, where each unit has a substantially different ownership arrangement, cost data are available on a unit-by-unit basis. Where possible, unit-by-unit cost histories have been provided.

The sources of cost data for the plots are the Federal Energy Regulatory Commission (FERC) Form 1 for private utility companies and the Energy Information Administration (EIA) Form 412 for public utilities. Annual data submissions are required by the utilities; these were obtained from computerized databases from the Utility Data Institute, a McGraw-Hill Company. Due to the continuing deregulation of the electrical power industry, several utilities have successfully appealed to FERC to withhold from public disclosure key financial information, and as a consequence, complete cost data are not available for some nuclear units. In these cases, the cost plots for these units terminate at the last year for which cost data were received. All cost data, however, were adjusted to year 2001 dollars. In a few other cases, prior year cost data, for various reasons, were not available, and for these years a discontinuous line on the cost plots notes the missing data. Plants with incomplete cost histories include:

Plant	Year	Plant	Year
Braidwood	2001	Indian Point 3	2001
Byron	2001	LaSalle	2001
Calvert Cliffs	2001	Limerick	1997, 2001
Clinton	2000–2001	Millstone 2	2001
Cooper	1999–2001	Millstone 3	2001
Dresden	2001	Oyster Creek	2000–2001
FitzPatrick	2000–2001	Palisades	2000
Hatch	2000	Pilgrim	1999–2001
Hope Creek	1996	Susquehanna	2000–2001
Indian Point 2	2001	Three Mile Island 1	1999–2001

Note that capital additions costs reported in the utility filings are based on the current total capitalized value for the plant. The change in the capital value reported from one year to the next is the only source of publicly available data that can be analyzed to determine capital additions. There are, however, limits to the accuracy of this approach. Reports of total capital value include all adjustments to the capital base, including any decommissioning or capital write-offs. As such, the annual capital additions represent net values of both additions and reductions in the capital asset base. As a result, the change in capital value for some years is a

negative value. For the purposes of this report, years with negative capital change are shown as zero capital additions cost. Owing also to this net reporting, capital additions are not possible to discern in a year in which a new unit is placed into service at a multiunit site that is reported on a total plant basis. Finally, some utilities have sold part of their capital asset base to others in a sale/lease arrangement. In some cases, the reduced capital asset value that is reported precludes determining a true capital additions cost. In each of these scenarios, the capital additions cost has been shown on the charts as a zero value.

The nuclear power plant operating experience summaries contained in this document were prepared from several sources. Plant outage data were extracted from the monthly operating reports compiled by the Idaho National Engineering and Environmental Laboratory (INEEL) for the period January 2000 through December 2001. NRC-imposed enforcement actions or civil penalties were obtained from the NRC database for enforcement actions. Significant events were extracted from NRC Daily Events reported in compliance with 10 CFR 50.72, and operational events were taken from the NRC Sequence Coding and Search System (SCSS) licensee event reports (LERs). The intent of these summaries is to identify important operating events, major refueling and maintenance outages, operating milestones, and significant licensing or enforcement actions. A significant outage is defined as an outage that represents approximately one percent annual availability factor lost. Note that if a month that an event began is the same as the month it ended, the common date is only listed one time. Significant events identified for inclusion in this report typically included the following:

- Unexpected core damage initiators: loss-of-offsite power (LOSP), steam generator tube rupture (SGTR), and small-break loss-of-coolant accidents (LOCA);
- All events in which a reactor trip was demanded and a safety-related component failed;
- All support system failures, including failures in cooling water systems, instrument air, instrumentation and controls, and electric power systems;
- Any event in which two or more failures occurred;
- Any event or operating condition that was not predicted or that proceeded differently from the plant design basis; and
- Any event that, based on the reviewers' experience, could have resulted in or significantly affected a chain of events leading to potential severe core damage.

Events determined to be significant were then summarized in this report.

Comments on the operating cost and experience information in this report should be submitted to:

Dr. Ronald Uleck
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington D.C. 20555

Table 1. Operational units summary

Docket No.	Plant Name	Nameplate rating (MWe)	MDC net (MWe)	Cumulative availability factor	Cumulative capacity factor (MDC net)	Cumulative forced outage rate	Construction permit date	Operating license date	Commercial operation date	License expiration date
313	Arkansas Nuclear One 1	903	836	77.12	70.28	8.53	12/6/1968	5/21/1974	12/19/1974	5/20/2034
368	Arkansas Nuclear One 2	943	858	79.20	78.29	8.13	12/6/1972	9/1/1978	3/26/1980	7/17/2018
334	Beaver Valley 1	923	821	66.49	60.44	16.15	6/26/1970	7/2/1976	10/1/1976	1/29/2016
412	Beaver Valley 2	923	831	81.33	76.38	10.41	5/3/1974	8/14/1987	11/17/1987	5/7/2027
456	Braidwood 1	1175	1168	82.24	75.06	4.80	12/31/1975	7/2/1987	7/29/1988	10/17/2026
457	Braidwood 2	1175	1122	87.55	82.96	3.22	12/31/1975	5/20/1988	10/17/1988	12/18/2027
259	Browns Ferry 1	1152	N/A	N/A	N/A	N/A	510/1967	12/20/1975	81/1974	12/20/2013
260	Browns Ferry 2	1152	1118	74.95	66.43	11.39	5/10/1967	8/2/1974	3/1/1975	6/28/2014
296	Browns Ferry 3	1152	1118	75.32	68.29	11.78	7/31/1968	8/18/1976	3/1/1977	7/2/2016
325	Brunswick 1	867	820	68.71	61.36	10.33	2/7/1970	11/12/1976	3/18/1977	9/8/2016
324	Brunswick 2	867	811	67.89	59.11	8.50	2/7/1970	12/27/1974	11/3/1975	12/27/2014
454	Byron 1	1175	1163	83.99	74.32	1.76	12/31/1975	2/14/1985	9/16/1985	10/31/2024
455	Byron 2	1175	1131	89.18	81.44	1.70	12/31/1975	1/30/1987	8/21/1987	11/6/2026
483	Callaway	1236	1125	88.52	86.43	2.01	4/16/1976	10/18/1984	12/19/1984	10/18/2024
317	Calvert Cliffs 1	918	825	74.74	73.94	7.16	7/7/1969	7/31/1974	5/8/1975	7/31/2034
318	Calvert Cliffs 2	911	835	76.94	75.67	4.47	7/7/1969	11/30/1976	4/1/1977	8/31/2036
413	Catawba 1	1305	1129	81.08	79.21	5.93	8/7/1975	1/17/1985	6/29/1985	12/6/2024
414	Catawba 2	1305	1129	81.36	79.42	7.39	8/7/1975	5/15/1986	8/19/1986	2/24/2026
461	Clinton	985	930	63.73	59.29	7.26	2/24/1976	4/17/1987	11/24/1987	9/29/2026
397	Columbia Generating Station	1199	1107	74.35	64.23	8.44	3/19/1973	4/13/1984	12/13/1984	12/20/2023
445	Comanche Peak 1	1161	1150	86.61	79.78	2.98	12/19/1974	4/17/1990	8/13/1990	2/8/2030
446	Comanche Peak 2	1161	1150	88.26	82.70	3.07	12/19/1974	4/6/1993	8/3/1993	2/2/2033
315	(D.C.) Cook 1	1152	1000	66.43	61.48	19.65	3/25/1969	10/25/1974	8/28/1975	10/25/2014
316	(D.C.) Cook 2	1133	1060	61.98	56.95	24.51	3/25/1969	12/23/1977	7/1/1978	12/23/2017
298	Cooper	836	764	75.22	66.42	7.29	6/4/1968	1/18/1974	7/1/1974	1/18/2014
302	Crystal River 3	890	834	67.66	62.85	18.50	9/25/1968	1/28/1977	3/13/1977	12/3/2016
346	Davis-Besse 1	925	882	70.96	65.26	13.69	3/24/1971	4/22/1977	7/31/1978	4/22/2017
275	Diablo Canyon 1	1137	1087	86.34	82.02	2.88	4/23/1968	11/2/1984	5/7/1985	9/22/2021
323	Diablo Canyon 2	1164	1087	87.50	84.60	3.26	12/9/1970	8/26/1985	3/13/1986	4/26/2025
237	Dresden 2	840	772	72.41	61.06	12.33	1/10/1966	12/22/1969	6/9/1970	1/10/2006

Table 1. Operational units summary – cont.

Docket No.	Plant Name	Nameplate rating (MWe)	MDC net (MWe)	Cumulative availability factor	Cumulative capacity factor (MDC net)	Cumulative forced outage rate	Construction permit date	Operating license date	Commercial operation date	License expiration date
249	Dresden 3	840	773	70.60	60.02	12.94	10/14/1966	3/2/1971	11/16/1971	1/12/2011
331	Duane Arnold	566	566	77.11	62.49	8.61	6/22/1970	2/22/1974	2/1/1975	2/21/2014
348	(Joseph M.) Farley 1	860	833	80.50	76.39	4.71	8/16/1972	6/25/1977	12/1/1977	6/25/2017
364	(Joseph M.) Farley 2	860	842	85.76	81.32	2.92	8/16/1972	3/31/1981	7/30/1981	3/31/2021
341	Fermi 2	1179	1089	71.94	65.52	16.69	9/26/1972	7/15/1985	1/23/1988	3/20/2025
333	(James A.) FitzPatrick	883	813	72.52	66.01	10.02	5/20/1970	10/17/1974	7/28/1975	10/17/2014
285	Fort Calhoun 1	502	478	79.85	71.94	3.81	6/7/1968	8/9/1973	8/9/1973	8/9/2013
244	(Robert E.) Ginna	517	480	81.00	76.62	4.75	4/25/1966	9/19/1969	7/1/1970	9/18/2009
416	Grand Gulf 1	1373	1210	82.85	78.00	5.11	9/4/1974	11/1/1984	7/1/1985	6/16/2022
400	(Shearon) Harris 1	951	860	84.22	82.04	2.73	1/27/1978	1/12/1987	5/2/1987	10/14/2026
321	(Edwin I.) Hatch 1	850	863	77.52	65.02	8.43	9/30/1969	10/13/1974	12/31/1975	8/6/2014
366	(Edwin I.) Hatch 2	850	878	78.64	65.93	5.51	12/27/1972	6/13/1978	9/5/1979	6/13/2018
354	Hope Creek 1	1170	1049	83.67	80.74	4.24	11/4/1974	7/25/1986	12/20/1986	4/11/2026
247	Indian Point 2	1013	951	67.46	59.41	14.45	10/14/1966	9/28/1973	8/1/1974	9/28/2013
286	Indian Point 3	1013	965	60.69	55.67	23.80	8/13/1969	4/5/1976	8/30/1976	12/15/2015
305	Kewaunee	560	511	83.98	82.00	1.65	8/6/1968	12/21/1973	6/16/1974	12/21/2013
373	LaSalle County 1	1146	1111	66.84	59.67	11.25	9/10/1973	8/13/1982	1/1/1984	5/17/2022
374	LaSalle County 2	1146	1111	65.62	59.29	16.83	9/10/1973	3/23/1984	10/19/1984	12/26/2023
352	Limerick 1	1160	1143	85.77	76.80	3.55	6/19/1974	8/8/1985	2/1/1986	10/26/2024
353	Limerick 2	1162	1143	91.18	84.65	2.92	6/19/1974	8/25/1989	1/8/1990	6/22/2029
369	McGuire 1	1305	1100	75.93	73.22	9.85	2/23/1973	7/8/1981	12/1/1981	6/21/2021
370	McGuire 2	1305	1100	80.96	81.09	5.72	2/23/1973	5/27/1983	3/1/1984	3/3/2023
336	Millstone Point 2	909	869	60.65	56.76	26.31	12/11/1970	9/30/1975	12/26/1975	7/31/2015
423	Millstone Point 3	1253	1136	67.49	64.67	25.07	8/9/1974	1/31/1986	4/23/1986	11/25/2025
263	Monticello	577	578	81.07	71.90	4.63	6/19/1967	1/9/1981	6/30/1971	9/8/2010
220	Nine Mile Point 1	642	565	68.07	66.92	20.66	4/12/1965	12/26/1974	12/1/1969	8/22/2009
410	Nine Mile Point 2	1259	1120	76.70	71.21	9.88	6/24/1974	7/2/1987	3/11/1988	10/31/2026
338	North Anna 1	994	925	79.05	72.77	6.85	2/19/1971	4/1/1978	6/6/1978	4/1/2018
339	North Anna 2	979	917	84.61	79.67	4.36	2/19/1971	8/21/1980	12/14/1980	8/21/2020
269	Oconee 1	934	846	77.06	74.03	9.56	11/6/1967	2/6/1973	7/15/1973	2/6/2033

Table 1. Operational units summary – cont.

Docket No.	Plant Name	Nameplate rating (MWe)	MDC net (MWe)	Cumulative availability factor	Cumulative capacity factor (MDC net)	Cumulative forced outage rate	Construction permit date	Operating license date	Commercial operation date	License expiration date
270	Oconee 2	934	846	79.68	76.09	8.93	11/6/1967	10/6/1973	9/9/1974	10/6/2033
287	Oconee 3	934	846	77.49	75.50	9.52	11/6/1967	7/19/1974	12/16/1974	7/19/2034
219	Oyster Creek	550	619	70.79	64.54	8.89	12/15/1964	8/1/1969	12/1/1969	12/15/2009
255	Palisades	812	730	59.17	54.99	26.00	3/14/1967	10/16/1972	12/31/1971	3/14/2007
528	Palo Verde 1	1403	1243	75.13	72.59	7.40	5/25/1976	6/1/1985	1/28/1986	12/31/2024
529	Palo Verde 2	1403	1243	78.06	76.21	3.85	5/25/1976	4/24/1986	9/19/1986	12/9/2025
530	Palo Verde 3	1403	1247	81.94	80.06	3.18	5/25/1976	11/25/1987	1/8/1988	3/25/2027
277	Peach Bottom 2	1221	1093	70.01	62.65	9.20	1/31/1968	12/14/1973	7/5/1974	8/8/2013
278	Peach Bottom 3	1221	1093	70.70	62.74	9.21	1/31/1968	7/2/1974	12/23/1974	7/2/2014
440	Perry 1	1250	1241	76.00	69.40	7.79	5/3/1977	11/13/1986	11/18/1987	3/18/2026
293	Pilgrim 1	678	653	66.44	60.66	9.86	8/26/1968	9/15/1972	12/1/1972	6/8/2012
266	Point Beach 1	524	510	80.90	72.93	4.58	7/19/1967	10/5/1970	12/21/1970	10/5/2010
301	Point Beach 2	524	512	83.42	76.33	2.22	7/25/1968	3/8/1973	10/1/1972	3/8/2013
282	Prairie Island 1	593	522	85.41	81.58	4.75	6/25/1968	4/5/1974	12/16/1973	8/9/2013
306	Prairie Island 2	593	522	87.92	83.94	2.99	6/25/1968	10/29/1974	12/21/1974	10/29/2014
254	Quad Cities 1	828	769	75.89	66.92	6.72	2/15/1967	12/14/1972	2/18/1973	12/14/2012
265	Quad Cities 2	828	769	73.84	64.70	9.99	2/15/1967	12/14/1972	3/10/1973	12/14/2012
458	River Bend 1	936	936	76.46	72.46	9.41	3/25/1977	11/20/1985	6/16/1986	8/29/2025
261	(H. B.) Robinson 2	739	683	74.18	70.59	11.55	4/13/1967	9/23/1970	3/7/1971	7/31/2010
272	Salem 1	1170	1096	60.37	55.76	27.13	9/25/1968	12/1/1976	6/30/1977	8/13/2016
311	Salem 2	1170	1092	61.69	57.26	26.67	9/25/1968	5/20/1981	10/13/1981	4/18/2020
361	San Onofre 2	1127	1070	79.25	78.85	3.91	10/18/1973	9/7/1982	8/8/1983	10/18/2013
362	San Onofre 3	1127	1080	80.21	78.18	5.51	10/18/1973	11/15/1982	4/1/1984	10/18/2013
443	Seabrook 1	1197	1155	62.79	60.95	6.36	7/7/1976	5/26/1989	8/19/1990	10/17/2026
327	Sequoyah 1	1221	1122	63.86	61.65	24.42	5/27/1970	9/17/1980	7/1/1981	9/17/2020
328	Sequoyah 2	1221	1117	69.57	66.31	22.93	5/27/1970	9/15/1981	6/1/1982	9/15/2021
498	South Texas Project 1	1311	1251	75.94	73.80	14.30	12/22/1975	3/22/1988	8/25/1988	8/20/2027
499	South Texas Project 2	1311	1251	77.92	75.64	14.01	12/22/1975	12/16/1988	6/19/1989	12/15/2028
335	St Lucie 1	850	839	79.68	77.51	4.29	7/1/1970	3/1/1976	12/21/1976	3/1/2016
389	St Lucie 2	850	839	85.71	84.04	4.79	5/2/1977	6/10/1983	8/8/1983	4/6/2023

Table 1. Operational units summary – cont.

Docket No.	Plant Name	Nameplate rating (MWe)	MDC net (MWe)	Cumulative availability factor	Cumulative capacity factor (MDC net)	Cumulative forced outage rate	Construction permit date	Operating license date	Commercial operation date	License expiration date
395	(Virgil C.) Summer	900	966	82.14	73.65	3.29	3/21/1973	11/12/1982	1/1/1984	8/6/2022
280	Surry 1	848	810	73.43	66.27	12.76	6/25/1968	5/25/1972	12/22/1972	5/25/2012
281	Surry 2	848	815	72.26	66.37	10.15	6/25/1968	1/29/1973	5/1/1973	1/29/2013
387	Susquehanna 1	1165	1090	81.20	76.25	5.85	11/2/1973	11/12/1982	6/8/1983	7/17/2022
388	Susquehanna 2	1168	1111	84.97	79.55	4.34	11/2/1973	6/27/1984	2/12/1985	3/23/2024
289	Three Mile Island 1	872	786	65.49	65.32	28.04	5/18/1968	4/19/1974	9/2/1974	4/19/2014
250	Turkey Point 3	760	693	72.03	67.46	8.50	4/27/1967	7/19/1972	12/14/1972	7/19/2012
251	Turkey Point 4	760	693	72.07	67.98	7.92	4/27/1967	4/10/1973	9/7/1973	4/10/2013
271	Vermont Yankee	540	510	82.98	78.62	4.22	12/11/1967	2/28/1973	11/30/1972	3/21/2012
424	(Alvin W.) Vogtle 1	1215	1148	88.49	86.14	3.34	6/28/1974	3/16/1987	6/1/1987	1/16/2027
425	(Alvin W.) Vogtle 2	1215	1149	90.62	88.74	1.46	6/28/1974	2/8/1989	5/20/1989	2/9/2029
382	Waterford 3	1200	1075	84.71	83.96	3.90	11/14/1974	3/16/1985	9/24/1985	12/18/2024
390	Watts Bar 1	1270	1125	91.48	89.44	1.88	1/23/1973	2/7/1996	5/27/1996	11/9/2035
482	Wolf Creek 1	1236	1170	84.71	81.84	2.70	5/31/1977	6/4/1985	9/3/1985	3/11/2025

N/A = not available

Note: See *Glossary* (page xi) for definitions of “cumulative capacity factor” and “cumulative availability factor.”

Table 2. Permanently shutdown units

Docket No.	Plant name	Nameplate rate (MWe)	MDC net (MWe)	Cumulative availability factor	Cumulative capacity factor (MDC net)	Cumulative forced outage rate	Construction permit date	Operating license date	Commercial operation date	License expiration date
155	Big Rock Point	75	67	71.3	62.1	8.6	5/31/1960	8/30/1962	3/29/1963	5/3/2000*
213	Haddam Neck	600	560	76.8	72.8	6.3	5/26/1964	12/27/1974	1/1/1968	6/29/2007
309	Maine Yankee	920	860	73.1	67.8	9.1	10/21/1968	6/29/1973	12/28/1972	10/21/2008
245	Millstone 1	662	641	69.1	65.4	20.7	5/19/1966	10/31/1986	3/1/1971	10/6/2010
312	Rancho Seco	963	873	47.4	37.5	42.7	10/11/1968	8/16/1974	4/17/1975	Decommissioned
206	San Onofre 1	456	436	57.7	52.4	17.9	3/2/1964	3/27/1967	1/1/1968	Decommissioned
320	Three Mile Island 2	871	808	0.0	0.0	0.0	11/4/1969	2/8/1978	12/30/1978	Decommissioned
344	Trojan	1216	1095	61.2	54.2	13.7	2/8/1971	11/21/1975	5/20/1976	Decommissioned
29	Yankee-Rowe	185	167	77.7	73.7	4.9	11/4/1957	6/23/1961	7/1/1961	Decommissioned
295	Zion 1	1085	1040	63.0	52.1	15.8	12/26/1968	10/19/1973	12/31/73	4/6/2013
304	Zion 2	1085	1040	65.0	53.8	13.2	12/26/1968	11/14/1973	9/17/1974	4/14/2013

*Licensee has a facility operating license which authorizes possession only; no authorization to operate the reactor or retain fuel.

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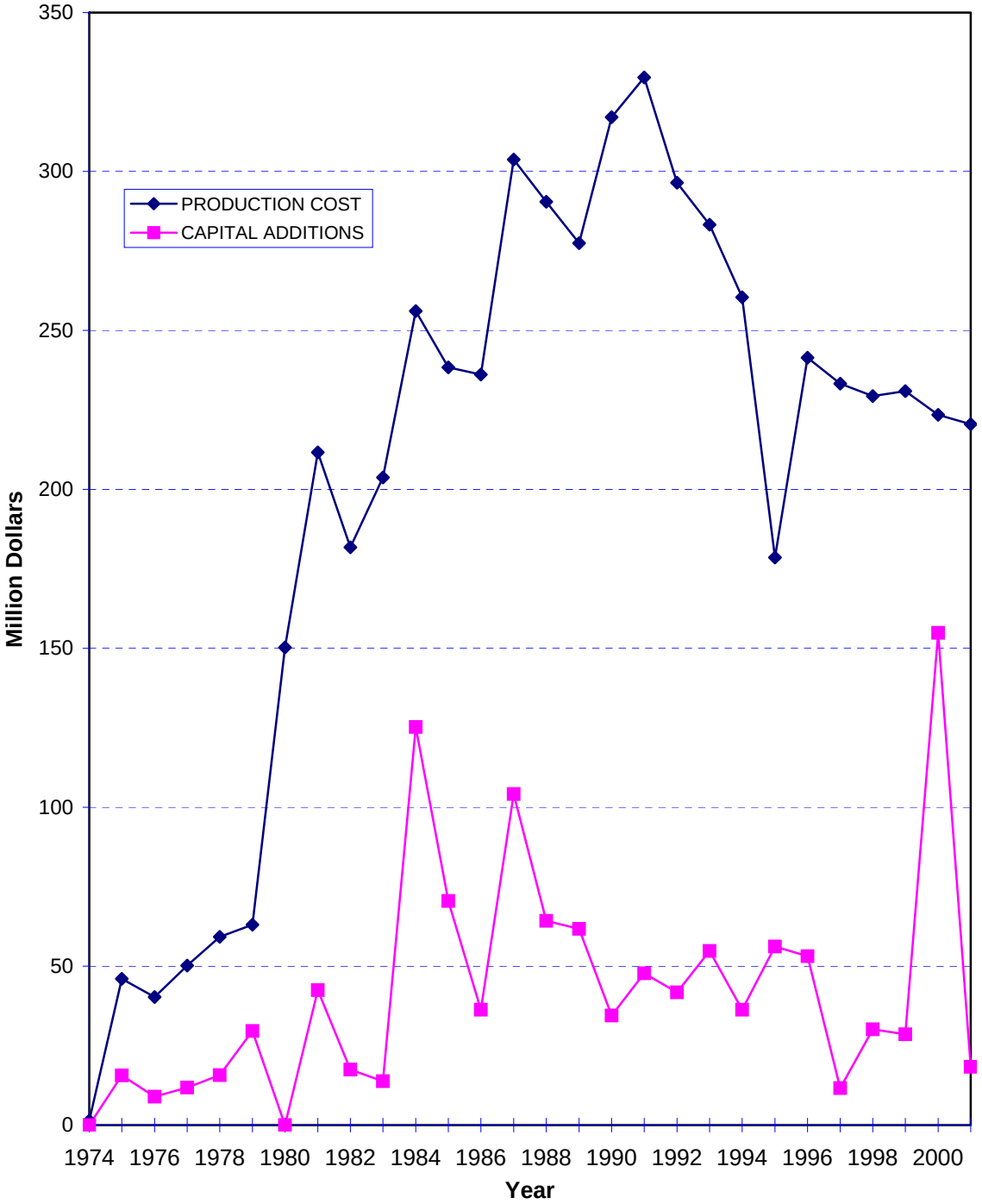
U.S. NUCLEAR POWER PLANT
COST AND EXPERIENCE SUMMARIES

ARKANSAS NUCLEAR ONE
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**ARKANSAS NUCLEAR ONE 1**	Nameplate Rating (MWe):	**903**
Location:	**Pope County, Arkansas**	MDC Net (MWe):	**836**
Operator:	**Entergy Operations, Inc.**	Cumul. Avail. Factor:	**77.1**
Type:	**Babcock and Wilcox PWR**	Cumul. Cap. Factor (MDC Net):	**70.3**
Construction Permit:	**12/6/1968**	Cumul. Forced Outage Rate:	**8.5**
Operating License Date:	**5/21/1974**	2-Year Avg. Cap. Factor (MDC Net):	**90.6**
Commercial Oper. Date:	**12/19/1974**	License Expiration Date:	**5/20/2034**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000	Mar 2000	Planned maintenance outage lasting 39 days to replace a reactor coolant pump anti-reverse rotation device. Emergent problems with decay heat pumps and reactor coolant system instrument nozzles extended the maintenance outage through the end of the month. There was a manual reactor trip due to a turbine governor valve limiter switch causing the governor valves to close. The operators manually took the turbine off-line due to an excessive electrohydraulic fluid leak; however, the reactor remained critical.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for 23 days for a refueling outage. A control rod drive mechanism nozzle was also repaired during the outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**ARKANSAS NUCLEAR ONE 2**	Nameplate Rating (MWe):	**943**
Location:	**Pope County, Arkansas**	MDC Net (MWe):	**858**
Operator:	**Entergy Operations, Inc.**	Cumul. Avail. Factor:	**79.2**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**78.3**
Construction Permit:	**12/6/1972**	Cumul. Forced Outage Rate:	**8.1**
Operating License Date:	**9/1/1978**	2-Year Avg. Cap. Factor (MDC Net):	**87.6**
Commercial Oper. Date:	**3/26/1980**	License Expiration Date:	**7/17/2018**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jul 2000	Aug 2000	Planned shutdown for steam generator tube inspections; however, unplanned maintenance on the pressurizer heater thermal sleeves extended the steam generator tube inspection outage to more than 26 days.
Sep 2000	Dec 2000	The unit was taken off-line and shut down for more than 86 days for a refueling outage.
Jan 2001		The reactor remained critical while the turbine was taken off-line from 30% power because of high vibrations. However, condenser tube leakage increased and the unit was taken to cold shutdown conditions for condenser repairs. The forced outage lasted more than nine days.

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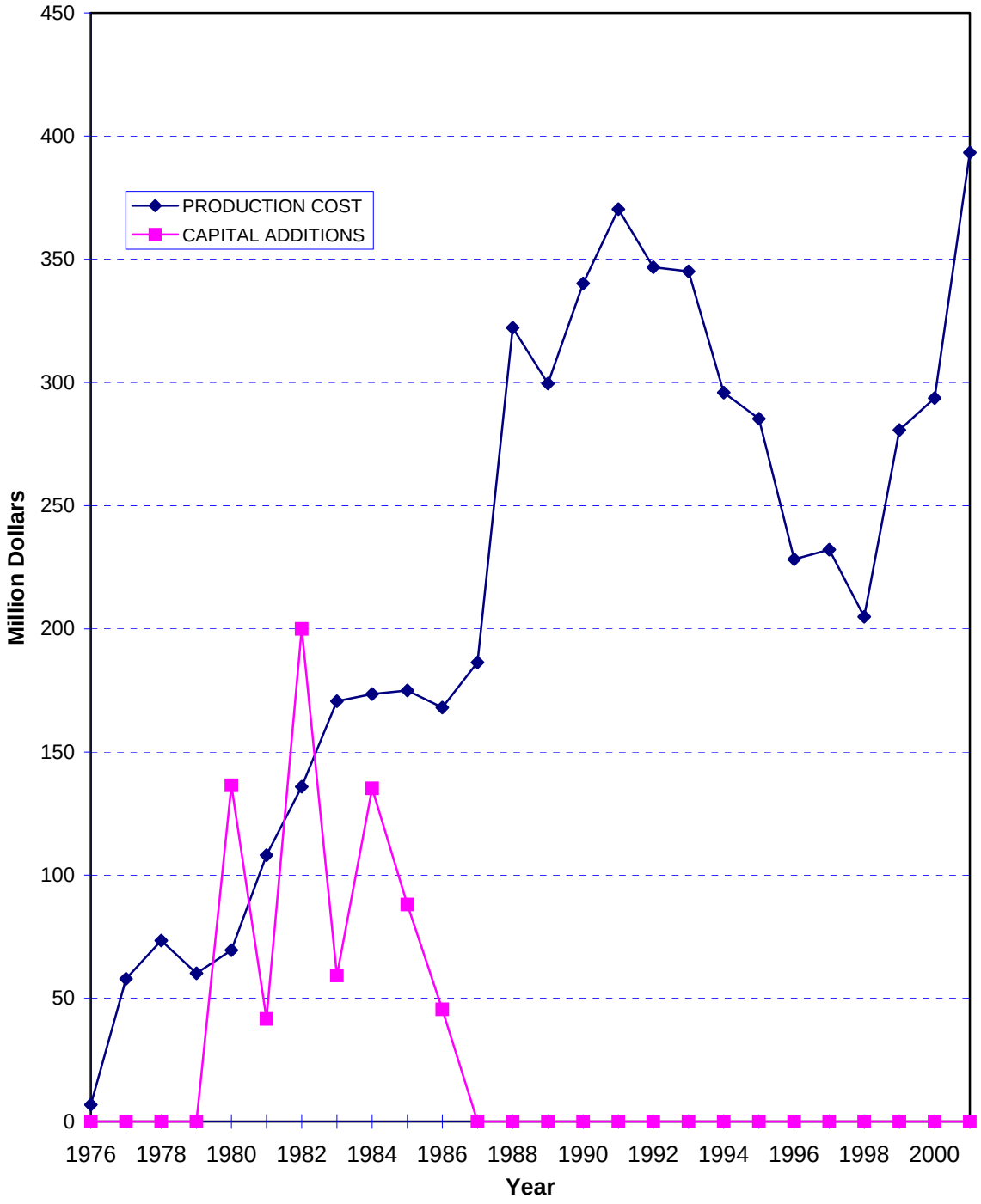
BEAVER VALLEY
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BEAVER VALLEY 1**	Nameplate Rating (MWe):	**923**
Location:	**Beaver County, Pennsylvania**	MDC Net (MWe):	**821**
Operator:	**FirstEnergy Nuclear Operating Company**	Cumul. Avail. Factor:	**66.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**60.4**
Construction Permit:	**6/26/1970**	Cumul. Forced Outage Rate:	**16.2**
Operating License Date:	**7/2/1976**	2-Year Avg. Cap. Factor (MDC Net):	**83**
Commercial Oper. Date:	**10/1/1976**	License Expiration Date:	**1/29/2016**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		Two river water system pumps tripped on overcurrent due to binding between the pump impeller and the pump bowl assembly. The binding was caused by differential thermal expansion of the pump shaft and pump casing. A temporary procedure to allow maintenance on a water treatment clarifier had increased the seal water temperature by about 70 degrees to the pumps causing the thermal expansion. The NRC cited the licensee for three Level III violation as a result of the incidents.
Feb 2000	Apr 2000	The unit was taken off-line and shut down for 54 days for a refueling outage.
Nov 2000		With both units at full power, several alarms were received and the control room lights flickered. Reports were received that an electric power line, which crosses the Ohio River in the vicinity of the plants, was down in the river and draped over the auxiliary intake structure.
Apr 2001		The unit was shut down to cold shutdown conditions for a scheduled maintenance outage that lasted for 9 days. The outage was used to replace the "A" and "B" reactor coolant pump seals due to erratic seal leakage. Iron oxide particulate deposition on the Number 1 seal faces caused the abnormal seal leakage.
Sep 2001	Oct 2001	The unit was taken off-line and shut down for 38 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BEAVER VALLEY 2**	Nameplate Rating (MWe):	**923**
Location:	**Beaver County, Pennsylvania**	MDC Net (MWe):	**831**
Operator:	**FirstEnergy Nuclear Operating Company**	Cumul. Avail. Factor:	**81.3**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**76.4**
Construction Permit:	**5/3/1974**	Cumul. Forced Outage Rate:	**10.4**
Operating License Date:	**8/14/1987**	2-Year Avg. Cap. Factor (MDC Net):	**92.6**
Commercial Oper. Date:	**11/17/1987**	License Expiration Date:	**5/7/2027**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for more than 32 days for a refueling outage. The reactor scrammed during the shutdown for the refueling outage when an automatic feedwater isolation caused the operating feedwater pump to trip.
Nov 2000		With both units at full power, several alarms were received and the control room lights flickered. Reports were received that an electric power line, which crosses the Ohio River in the vicinity of the plants, was down in the river and draped over the auxiliary intake structure.
Dec 2000		The plant was shut down for eight days and the licensee declared an unusual event due to a primary system leak in containment greater than allowable values. The leak was from the "B" reactor coolant system loop drain isolation valve packing gland. The valve is located in the primary containment building.

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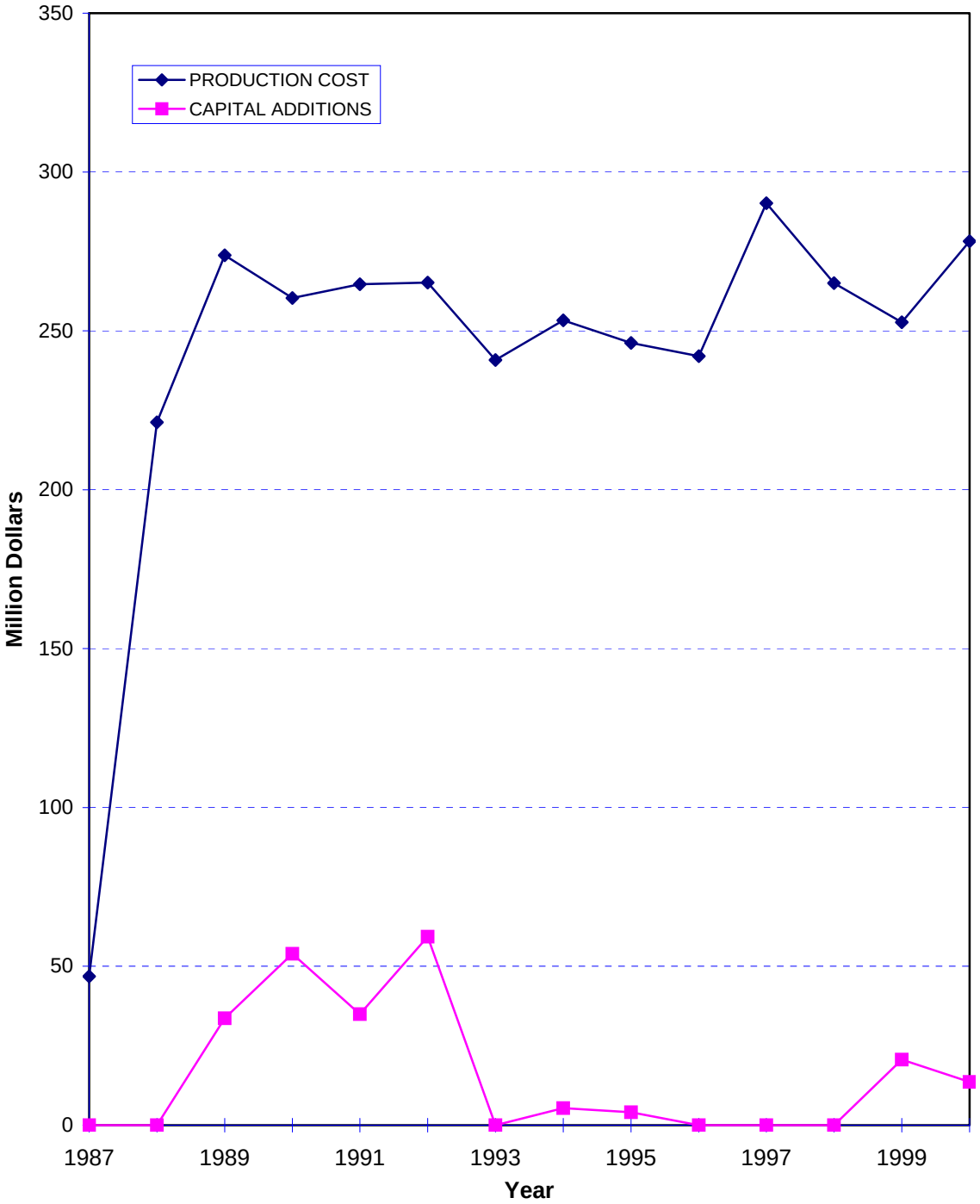
BRAIDWOOD
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BRAIDWOOD 1**	Nameplate Rating (MWe):	**1175**
Location:	**Will County, Illinois**	MDC Net (MWe):	**1168**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**82.2**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**75.1**
Construction Permit:	**12/31/1975**	Cumul. Forced Outage Rate:	**4.8**
Operating License Date:	**7/2/1987**	2-Year Avg. Cap. Factor (MDC Net):	**94.9**
Commercial Oper. Date:	**7/29/1988**	License Expiration Date:	**10/17/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	Apr 2000	The unit was taken off-line and shut down for nearly 19 days for a refueling outage.
Sep 2001	Oct 2001	The unit was taken off-line and shut down for 21 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BRAIDWOOD 2**	Nameplate Rating (MWe):	**1175**
Location:	**Will County, Illinois**	MDC Net (MWe):	**1122**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**87.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**83.0**
Construction Permit:	**12/31/1975**	Cumul. Forced Outage Rate:	**3.2**
Operating License Date:	**5/20/1988**	2-Year Avg. Cap. Factor (MDC Net):	**98.3**
Commercial Oper. Date:	**10/17/1988**	License Expiration Date:	**12/18/2027**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000		Forced outage for four days to repair a blown rod control fuse.
Oct 2000	Nov 2000	The unit was taken off-line and shut down for almost 16 days for a refueling outage.
Nov 2001		Scheduled maintenance outage lasting almost 10 days to repair excessive generator end vibrations.

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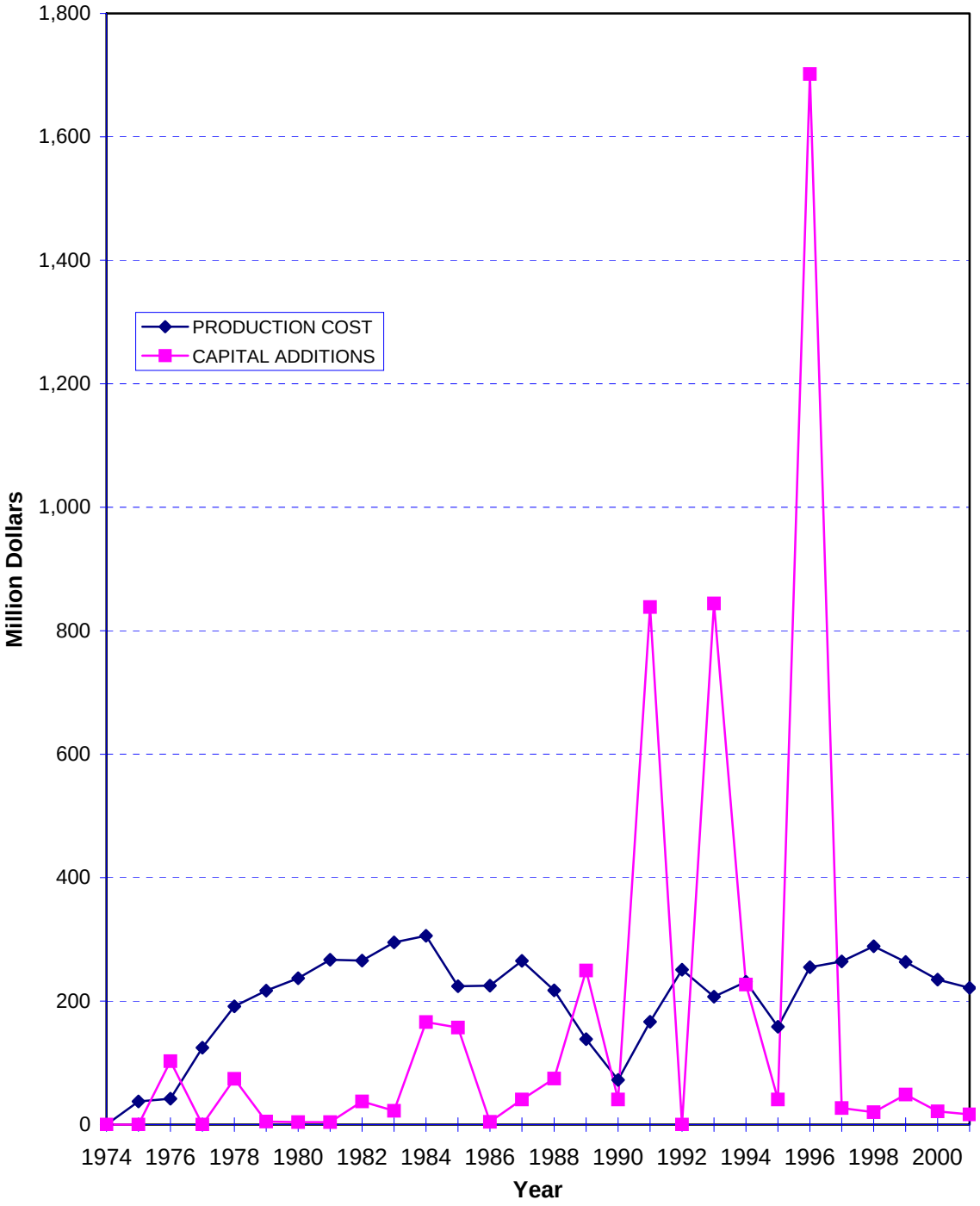
BROWNS FERRY
(Units 1, 2, and 3)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BROWNS FERRY 1**	Nameplate Rating (MWe):	**1152**
Location:	**Limestone County, Alabama**	MDC Net (MWe):	**N/A**
Operator:	**Tennessee Valley Authority**	Cumul. Avail. Factor:	**N/A**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**N/A**
Construction Permit:	**5/10/1967**	Cumul. Forced Outage Rate:	**N/A**
Operating License Date:	**12/20/1975**	2-Year Avg. Cap. Factor (MDC Net):	**N/A**
Commercial Oper. Date:	**8/1/1974**	License Expiration Date:	**12/20/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The NRC proposed a $110,000 fine for a Severity Level II violation involving employment discrimination against a former corporate employee for engaging in protected activities. On May 4, 2001, the NRC issued an Order imposing the monetary penalty. The NRC reviewed the licensee's denial of the violation and protest of the penalty dated January 22, 2000 and concluded that the agency's original proposal remained valid. On June 1, 2001, the licensee requested a hearing in response to the Order. At the close of the fiscal year, the case was still in adjudication with both parties in the discovery process.

Note: N/A = Not Available. Unit has not operated since 1985.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BROWNS FERRY 2**	Nameplate Rating (MWe):	**1152**
Location:	**Limestone County, Alabama**	MDC Net (MWe):	**1118**
Operator:	**Tennessee Valley Authority**	Cumul. Avail. Factor:	**75.0**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**66.4**
Construction Permit:	**5/10/1967**	Cumul. Forced Outage Rate:	**11.4**
Operating License Date:	**8/2/1974**	2-Year Avg. Cap. Factor (MDC Net):	**92.5**
Commercial Oper. Date:	**3/1/1975**	License Expiration Date:	**6/28/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The NRC proposed a $110,000 fine for a Severity Level II violation involving employment discrimination against a former corporate employee for engaging in protected activities. On May 4, 2001, the NRC issued an Order imposing the monetary penalty. The NRC reviewed the licensee's denial of the violation and protest of the penalty dated January 22, 2000 and concluded that the agency's original proposal remained valid. On June 1, 2001, the licensee requested a hearing in response to the Order. At the close of the fiscal year, the case was still in adjudication with both parties in the discovery process.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for 41 days for a refueling outage.
Dec 2001		Operators began to reduce power on the unit to repair leaks in the drywell. The plant was manually scrammed from 37% power. The scheduled outage lasted four days.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

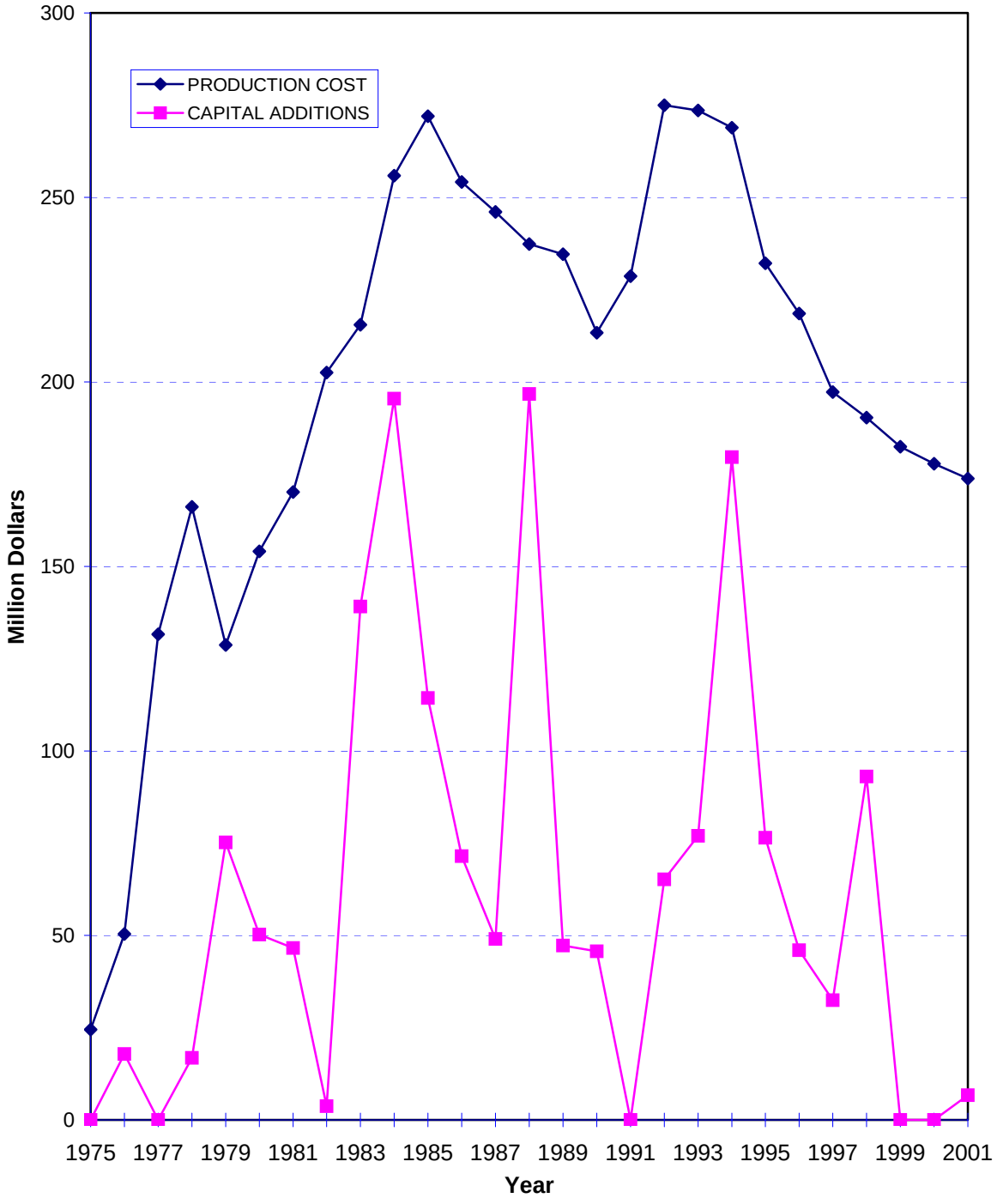
Unit:	**BROWNS FERRY 3**	Nameplate Rating (MWe):	**1152**
Location:	**Limestone County, Alabama**	MDC Net (MWe):	**1118**
Operator:	**Tennessee Valley Authority**	Cumul. Avail. Factor:	**75.3**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**68.3**
Construction Permit:	**7/31/1968**	Cumul. Forced Outage Rate:	**11.8**
Operating License Date:	**8/18/1976**	2-Year Avg. Cap. Factor (MDC Net):	**96.4**
Commercial Oper. Date:	**3/1/1977**	License Expiration Date:	**7/2/2016**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The NRC proposed a $110,000 fine for a Severity Level II violation involving employment discrimination against a former corporate employee for engaging in protected activities. On May 4, 2001. The NRC issued an Order imposing the monetary penalty. The NRC reviewed the licensee's denial of the violation and protest of the penalty dated January 22, 2000 and concluded that the agency's original proposal remained valid. On June 1, 2001, the licensee requested a hearing in response to the Order. At the close of the fiscal year, the case was still in adjudication with both parties in the discovery process.
Apr 2000	May 2000	The reactor scrammed while performing maintenance on 3B reactor feed pump. A clogged oil filter caused 3C reactor feed pump flow to decrease, resulting in a reactor scram due to low reactor water level. While shut down, the facility entered its Cycle 9 refueling outage. The outage lasted for 18 days.

BRUNSWICK
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



Unit Data Summary (Through December 2001)

Unit:	**BRUNSWICK 1**	Nameplate Rating (MWe):	**867**
Location:	**Brunswick County, North Carolina**	MDC Net (MWe):	**820**
Operator:	**Carolina Power & Light Company**	Cumul. Avail. Factor:	**68.7**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**61.4**
Construction Permit:	**2/7/1970**	Cumul. Forced Outage Rate:	**10.3**
Operating License Date:	**11/12/1976**	2-Year Avg. Cap. Factor (MDC Net):	**97.7**
Commercial Oper. Date:	**3/18/1977**	License Expiration Date:	**9/8/2016**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000	Mar 2000	The unit was taken off-line and shut down for 27.5 days for a refueling outage. During the outage, an unusual event was declared when all four site emergency diesel generators automatically started on a loss of power to the 4 KV emergency busses. A mispositioned switch during relay testing caused the loss of power to the busses. Unit 2 reduced power from 100% to 60% as a result of the engineering safety feature actuation.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BRUNSWICK 2**	Nameplate Rating (MWe):	**867**
Location:	**Brunswick County, North Carolina**	MDC Net (MWe):	**811**
Operator:	**Carolina Power & Light Company**	Cumul. Avail. Factor:	**67.9**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**59.1**
Construction Permit:	**2/7/1970**	Cumul. Forced Outage Rate:	**8.5**
Operating License Date:	**12/27/1974**	2-Year Avg. Cap. Factor (MDC Net):	**95.6**
Commercial Oper. Date:	**11/3/1975**	License Expiration Date:	**12/27/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000		The unit experienced a generator load reject and a reactor scram from 100% power; subsequently, an unusual event was declared due to a fire in the 2B main transformer. The transformer was replaced during an outage that lasted seven days.
Feb 2001	Mar 2001	The unit was taken off-line and shut down for 32 days for a refueling outage.

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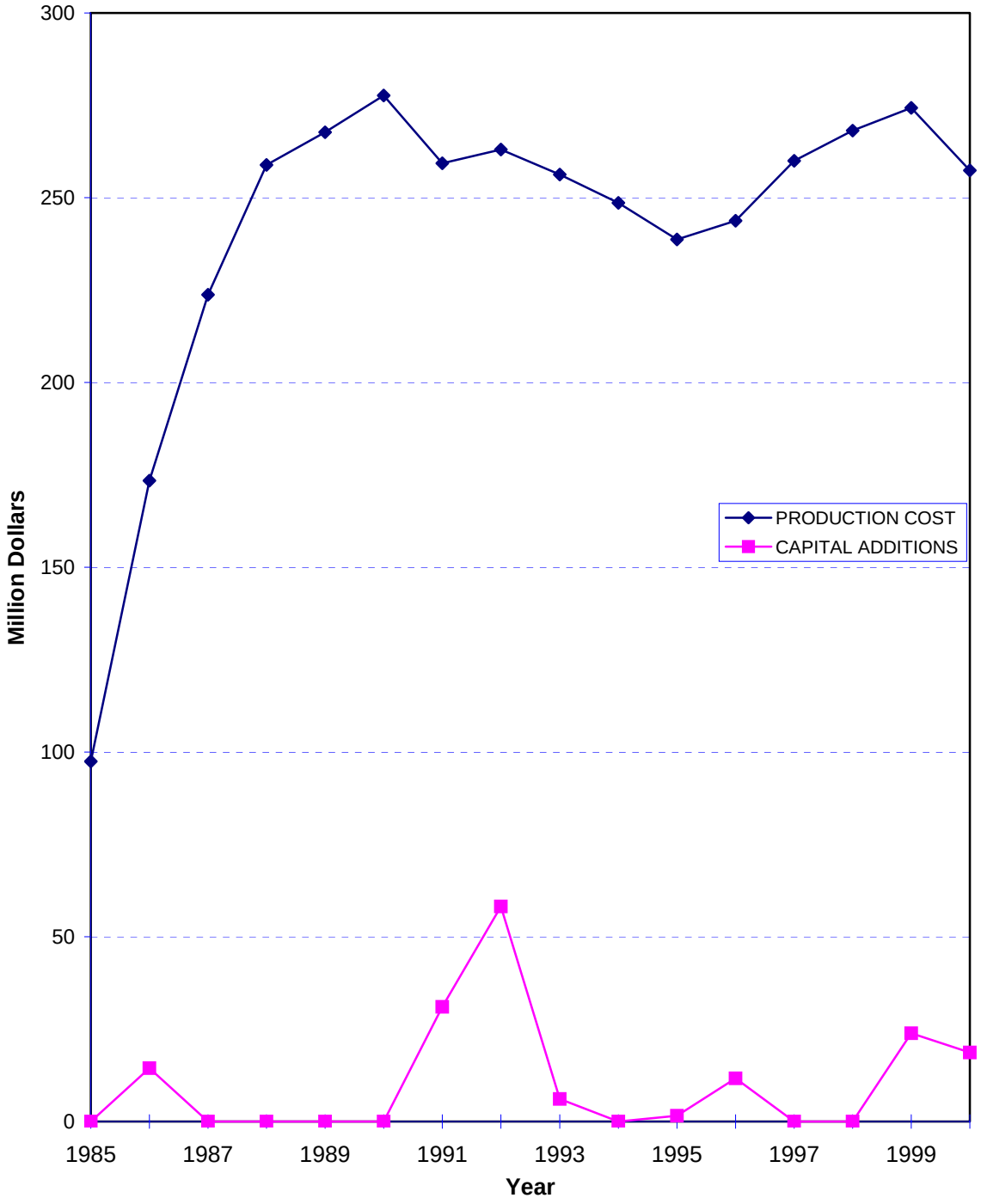
BYRON
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BYRON 1**	Nameplate Rating (MWe):	**1175**
Location:	**Ogle County, Illinois**	MDC Net (MWe):	**1163**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**84.0**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**74.3**
Construction Permit:	**12/31/1975**	Cumul. Forced Outage Rate:	**1.8**
Operating License Date:	**2/14/1985**	2-Year Avg. Cap. Factor (MDC Net):	**98.8**
Commercial Oper. Date:	**9/16/1985**	License Expiration Date:	**10/31/2024**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 21 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**BYRON 2**	Nameplate Rating (MWe):	**1175**
Location:	**Ogle County, Illinois**	MDC Net (MWe):	**1131**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**89.2**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**81.4**
Construction Permit:	**12/31/1975**	Cumul. Forced Outage Rate:	**1.7**
Operating License Date:	**1/30/1987**	2-Year Avg. Cap. Factor (MDC Net):	**101.2**
Commercial Oper. Date:	**8/21/1987**	License Expiration Date:	**11/6/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2001		The unit was taken off-line and shut down for almost 16 days for a refueling outage.

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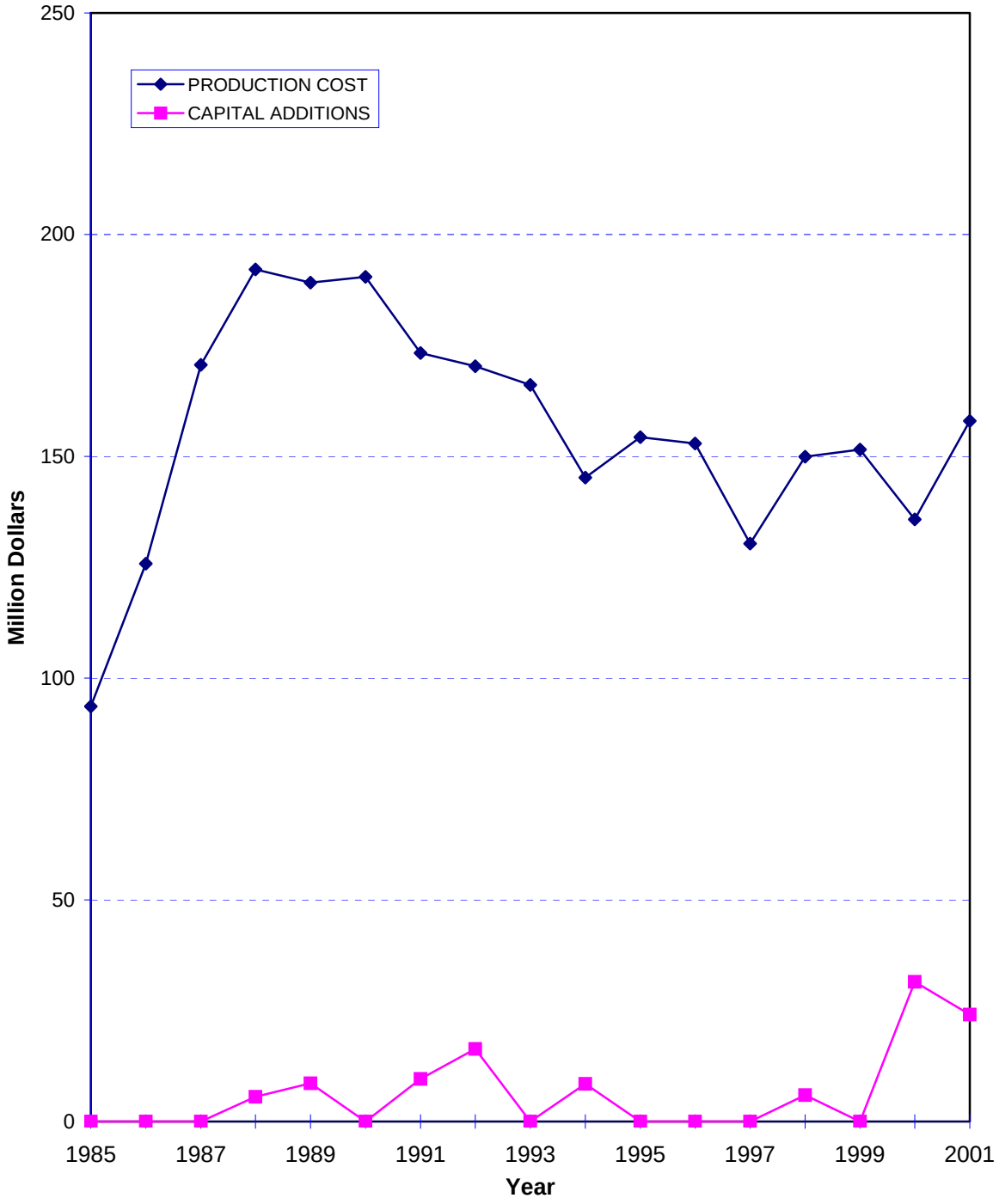
CALLAWAY

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

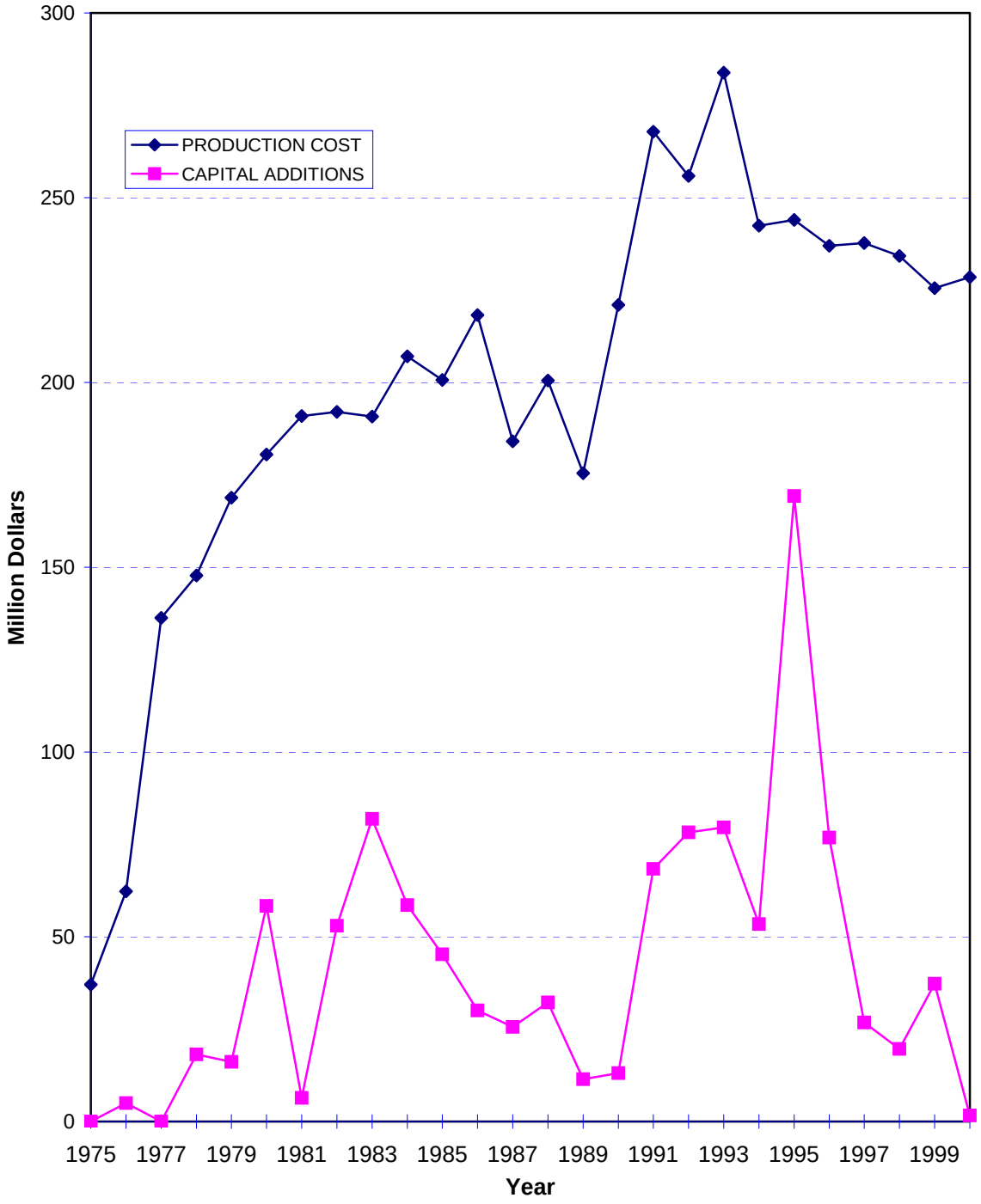
Unit:	**CALLAWAY 1**	Nameplate Rating (MWe):	**1236**
Location:	**Callaway County, Missouri**	MDC Net (MWe):	**1125**
Operator:	**AmerenUE**	Cumul. Avail. Factor:	**88.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**86.4**
Construction Permit:	**4/16/1976**	Cumul. Forced Outage Rate:	**2.0**
Operating License Date:	**10/18/1984**	2-Year Avg. Cap. Factor (MDC Net):	**93.1**
Commercial Oper. Date:	**12/19/1984**	License Expiration Date:	**10/18/2024**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		A downed 161 KV line in Southeast Missouri caused fluctuating grid voltage and resulted in a reactor coolant pump trip. The pump trip caused a reactor trip and subsequent loss of all the remaining operating reactor coolant pumps. The affected power line, breakers designed to isolate the line that did not open, and a 345 KV/ 161 KV transformer that failed were all owned and serviced by another (non-nuclear) utility.
Feb 2001		During an inspection, a 20-foot piece of 1.25" Tygon hose was found stuck in the suction of the B emergency service water pump. The pump had failed a surveillance test just before the inspection.
Mar 2001		Rod drive motor-generator B was out of service in preparation for maintenance when a 40 volt ripple tripped open the output breaker for the A rod drive motor-generator causing a reactor scram. Several control rods dropped on loss of power from both rod drive motor generator sets. The plant shut down for four days for repairs.
Apr 2001	May 2001	The unit was taken off-line and shut down for almost 45 days for a refueling outage.
May 2001		The NRC proposed a $55,000 fine for a Severity Level III violation for discriminating against a security officer and training instructor engaged in a protected activity.

CALVERT CLIFFS
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**CALVERT CLIFFS 1**	Nameplate Rating (MWe):	**918**
Location:	**Calvert County, Maryland**	MDC Net (MWe):	**825**
Operator:	**Constellation Nuclear**	Cumul. Avail. Factor:	**74.7**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**73.9**
Construction Permit:	**7/7/1969**	Cumul. Forced Outage Rate:	**7.2**
Operating License Date:	**7/31/1974**	2-Year Avg. Cap. Factor (MDC Net):	**96.1**
Commercial Oper. Date:	**5/8/1975**	License Expiration Date:	**7/31/2034**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	Apr 2000	The unit was taken off-line and shut down for 47 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**CALVERT CLIFFS 2**	Nameplate Rating (MWe):	**911**
Location:	**Calvert County, Maryland**	MDC Net (MWe):	**835**
Operator:	**Constellation Nuclear**	Cumul. Avail. Factor:	**76.9**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**75.7**
Construction Permit:	**7/7/1969**	Cumul. Forced Outage Rate:	**4.5**
Operating License Date:	**11/30/1976**	2-Year Avg. Cap. Factor (MDC Net):	**92.8**
Commercial Oper. Date:	**4/1/1977**	License Expiration Date:	**8/31/2036**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The plant was shut down for a seven day forced outage to make repairs to pressurizer safety valve, RV-200. The valve was leaking by the seat and while the volume of leakage was within limits for continued operation, it was deemed prudent to perform the repairs before further degradation occurred.
Mar 2001	May 2001	The unit was taken off-line and shut down for 58.5 days for a refueling outage.

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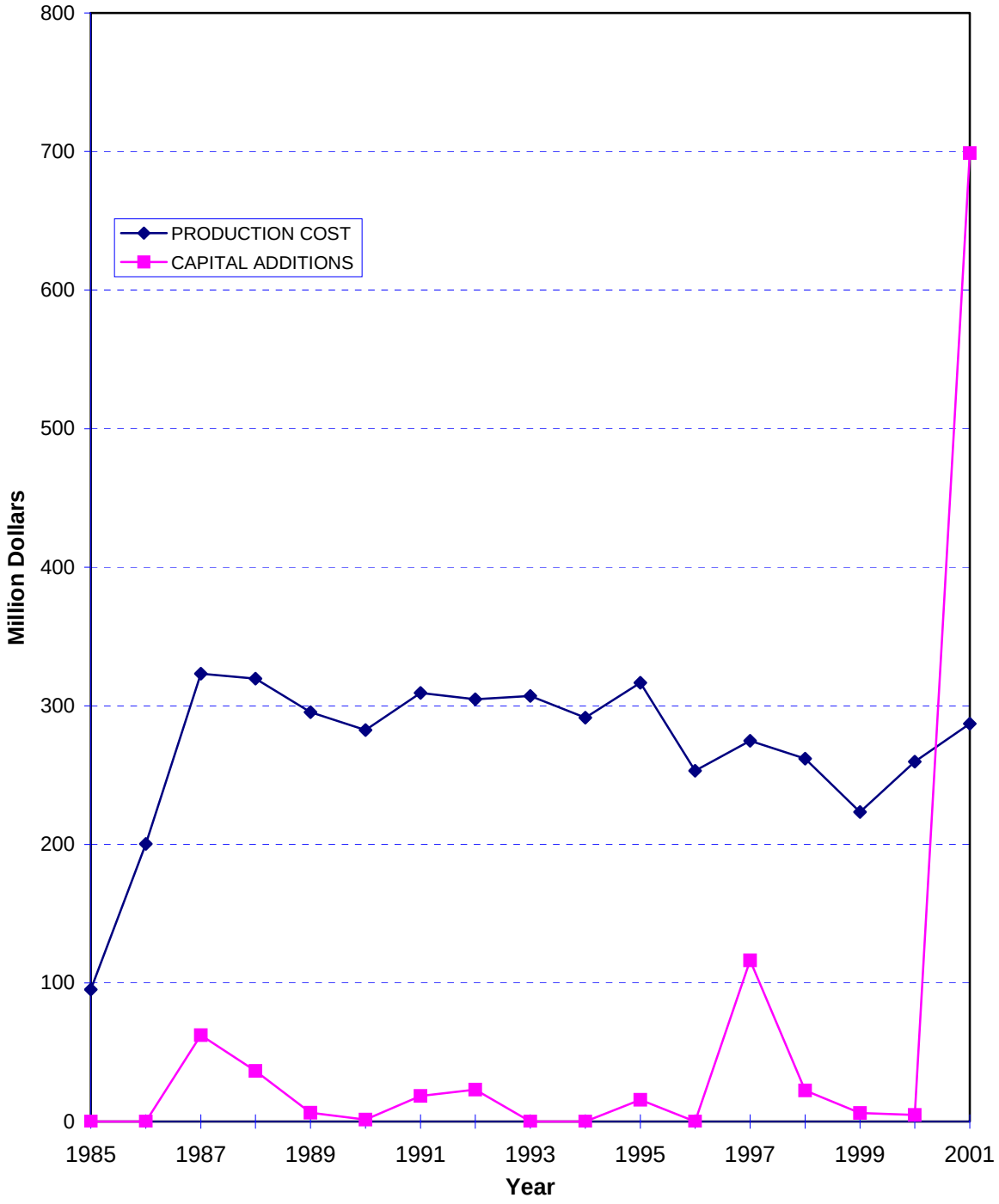
CATAWBA
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**CATAWBA 1**	Nameplate Rating (MWe):	**1305**
Location:	**York County, South Carolina**	MDC Net (MWe):	**1129**
Operator:	**Duke Power**	Cumul. Avail. Factor:	**81.1**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**79.2**
Construction Permit:	**8/7/1975**	Cumul. Forced Outage Rate:	**5.9**
Operating License Date:	**1/17/1985**	2-Year Avg. Cap. Factor (MDC Net):	**95.4**
Commercial Oper. Date:	**6/29/1985**	License Expiration Date:	**12/6/2024**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Nov 2000	The unit was taken off-line and shut down for more than 37 days for a refueling outage. During the outage, a voltage regulator potential transformer in the 1B diesel generator control circuit experienced a turn-to-turn fault and failed during an engineered safety feature test.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**CATAWBA 2**	Nameplate Rating (MWe):	**1305**
Location:	**York County, South Carolina**	MDC Net (MWe):	**1129**
Operator:	**Duke Power**	Cumul. Avail. Factor:	**81.4**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**79.4**
Construction Permit:	**8/7/1975**	Cumul. Forced Outage Rate:	**7.4**
Operating License Date:	**5/15/1986**	2-Year Avg. Cap. Factor (MDC Net):	**88.6**
Commercial Oper. Date:	**8/19/1986**	License Expiration Date:	**2/24/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Dec 1999	Jan 2000	The unit was shut down for approximately six days following a reactor trip from 100% power. The trip was due to an electrical ground within an electrical connector on the normally energized Turbine Electrical Trip Solenoid Valve (ETSV).
Mar 2000	Apr 2000	The unit was taken off-line and shut down for almost 29 days for a refueling outage.
Sep 2001	Oct 2001	The unit was taken off-line and shut down for nearly 38 days for the End of Cycle 11 refueling outage.
Dec 2001		The plant was shut down for 14 days to investigate why the reactor tripped due to low reactor coolant loop flow.

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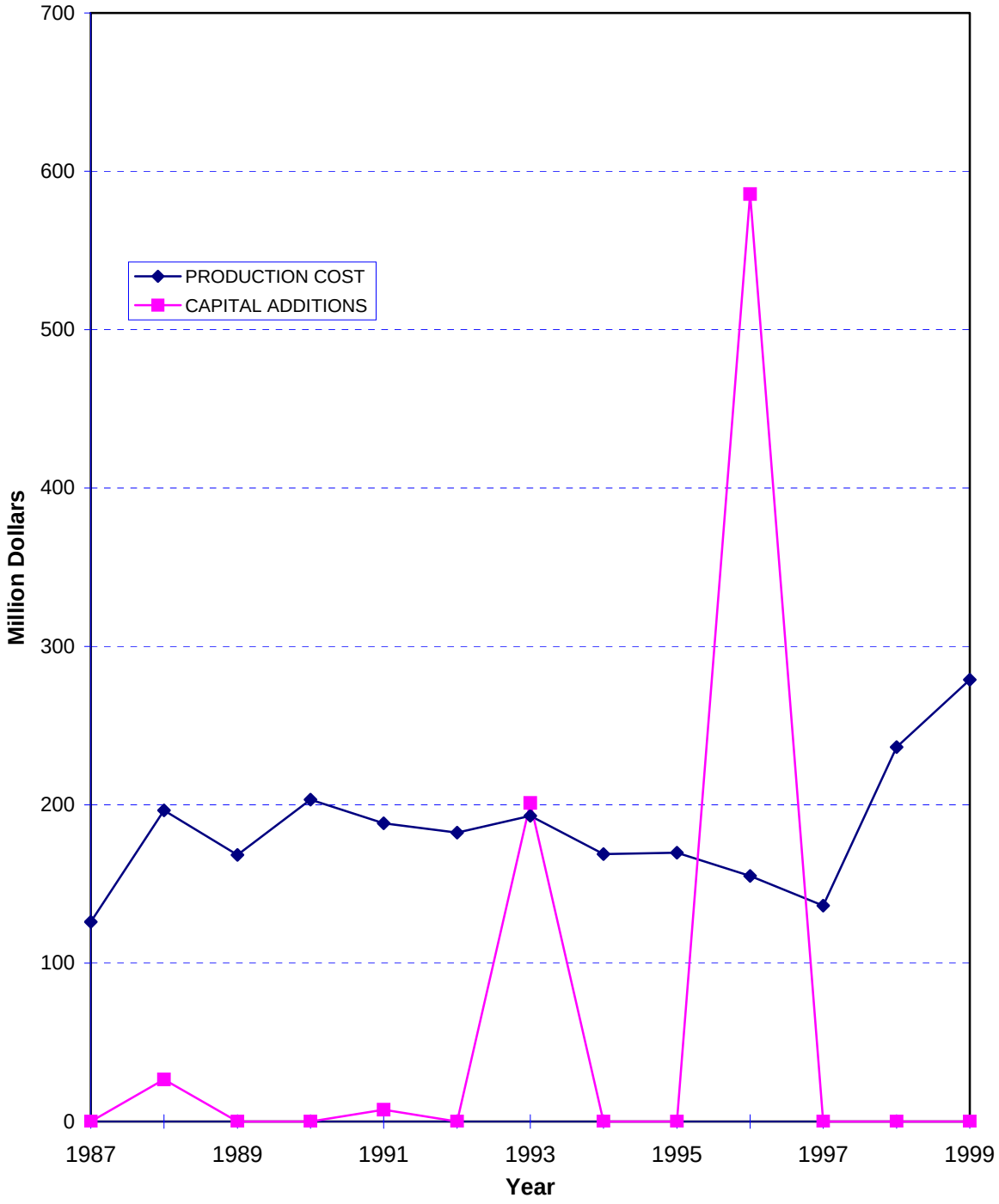
CLINTON

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

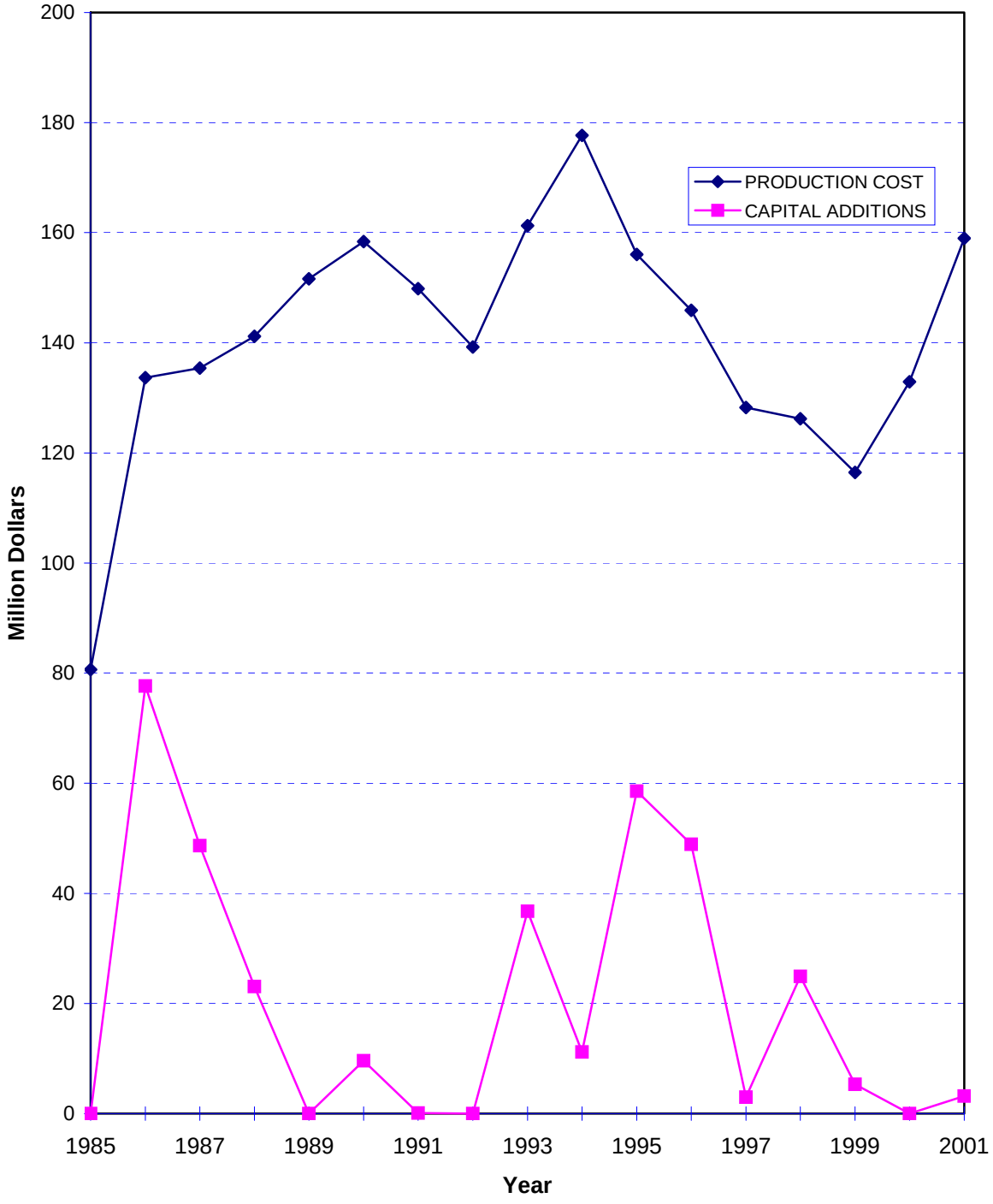
Unit:	**CLINTON 1**	Nameplate Rating (MWe):	**985**
Location:	**Dewitt County, Illinois**	MDC Net (MWe):	**930**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**63.7**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**59.3**
Construction Permit:	**2/24/1976**	Cumul. Forced Outage Rate:	**7.3**
Operating License Date:	**4/17/1987**	2-Year Avg. Cap. Factor (MDC Net):	**90.5**
Commercial Oper. Date:	**11/24/1987**	License Expiration Date:	**9/29/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
May 2000		A mislabeled test switch used during a maintenance activity caused a loss of bus voltage and a subsequent reactor pressure vessel level transient. The level transient resulted in a scram which caused a forced outage lasting seven days to investigate the anomaly.
Aug 2000		The unit was taken off-line and shut down for eight days for maintenance outage 10.
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 29 days for a refueling outage.
Dec 2000		The plant was at 100% power conducting surveillance tests on the Division 2 instrument channels. A pre-existing failed signal conditioning card caused all the main steam isolation valves to close and resulted in a reactor scram along with multiple failures and several operator errors.

COLUMBIA GENERATING STATION

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

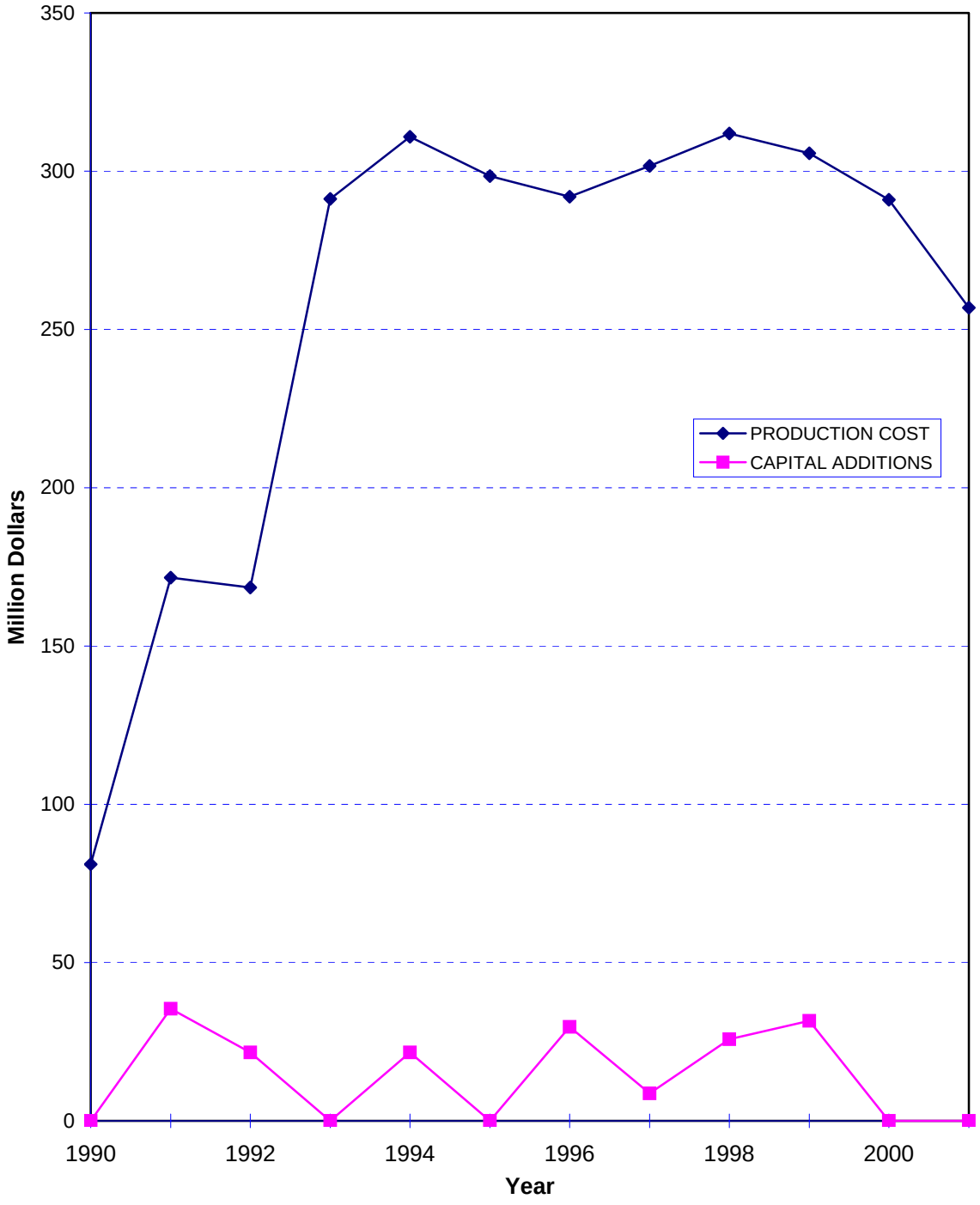
Unit:	**COLUMBIA GENERATING STATION**	Nameplate Rating (MWe):	**1199**
Location:	**Benton County, Washington**	MDC Net (MWe):	**1107**
Operator:	**Energy Northwest**	Cumul. Avail. Factor:	**74.3**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**64.2**
Construction Permit:	**3/19/1973**	Cumul. Forced Outage Rate:	**8.4**
Operating License Date:	**4/13/1984**	2-Year Avg. Cap. Factor (MDC Net):	**86.8**
Commercial Oper. Date:	**12/13/1984**	License Expiration Date:	**12/20/2023**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jun 2000	Jul 2000	A reactor scram occurred due to erroneous indication of phase current mismatch in station electrical output which was caused by a ground fault in a current transformer lead. The plant had an eight day forced outage to repair the damage.
Sep 2000		The plant had a planned outage for five days to repair a seal on reactor recirculation pump 1A.
May 2001	Jul 2001	The unit was taken off-line and shut down for more than 42.5 days for refueling and maintenance outage R15.
Jul 2001	Aug 2001	The unit had a planned shut down and forced outage lasting seven days to replace the upper seal on reactor recirculation pump 1B.

COMANCHE PEAK
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**COMANCHE PEAK 1**	Nameplate Rating (MWe):	**1161**
Location:	**Somervell County, Texas**	MDC Net (MWe):	**1150**
Operator:	**TXU Electric Company**	Cumul. Avail. Factor:	**86.6**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**79.8**
Construction Permit:	**12/19/1974**	Cumul. Forced Outage Rate:	**3.0**
Operating License Date:	**4/17/1990**	2-Year Avg. Cap. Factor (MDC Net):	**89.5**
Commercial Oper. Date:	**8/13/1990**	License Expiration Date:	**2/8/2030**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2001	Apr 2001	The unit initiated a manual reactor trip per procedure to begin 1RF08 refueling outage. The refueling outage lasted 29 days.
Aug 2001		The unit was taken off-line to repair main generator exciter rotor. The forced maintenance outage lasted almost 12 days.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**COMANCHE PEAK 2**	Nameplate Rating (MWe):	**1161**
Location:	**Somervell County, Texas**	MDC Net (MWe):	**1150**
Operator:	**TXU Electric Company**	Cumul. Avail. Factor:	**88.3**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**82.7**
Construction Permit:	**12/19/1974**	Cumul. Forced Outage Rate:	**3.1**
Operating License Date:	**4/6/1993**	2-Year Avg. Cap. Factor (MDC Net):	**93**
Commercial Oper. Date:	**8/3/1993**	License Expiration Date:	**2/2/2033**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Nov 2000	The unit was taken off-line and shut down for nearly 36 days for a refueling outage.

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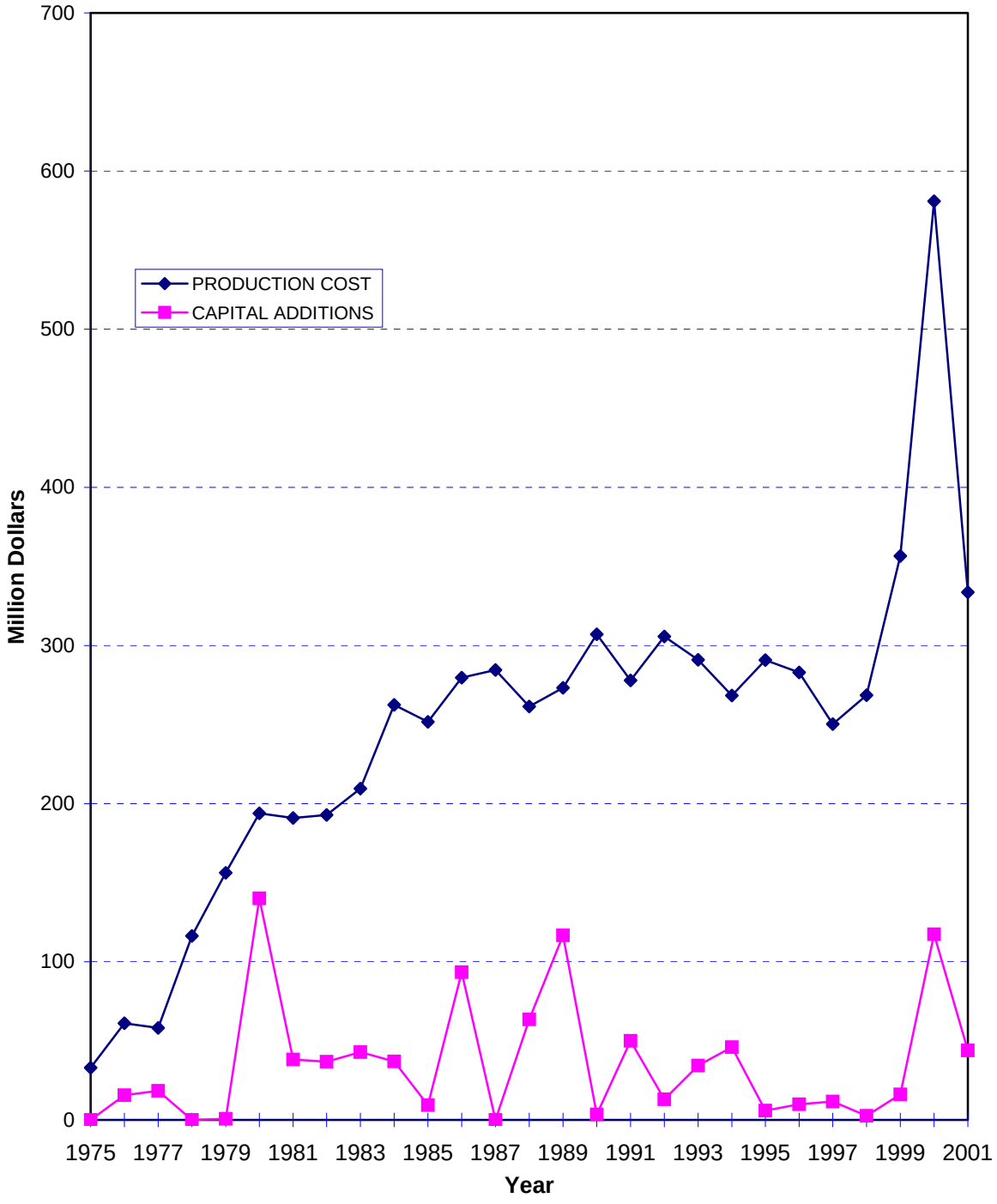
DC COOK
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**D.C. COOK 1**	Nameplate Rating (MWe):	**1152**
Location:	**Berrien County, Michigan**	MDC Net (MWe):	**1000**
Operator:	**Indiana Michigan Power Company**	Cumul. Avail. Factor:	**66.4**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**61.5**
Construction Permit:	**3/25/1969**	Cumul. Forced Outage Rate:	**19.6**
Operating License Date:	**10/25/1974**	2-Year Avg. Cap. Factor (MDC Net):	**45.2**
Commercial Oper. Date:	**8/28/1975**	License Expiration Date:	**10/25/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 1997	Dec 2000	The unit was taken off-line, shut down, and defueled on September 8, 1997 to resolve design basis questions discovered during a NRC architect and engineering inspection. The plant was shut down for 1201 days. See Supplement 1 to NUREG/CR-6577 for additional information for years 1997–1999.
Aug 2001	Sep 2001	The unit was shut down for 33 days for planned maintenance activities and to repair a circulating water valve. After the circulating water valve was repaired, the outage was changed to a forced outage because of degraded essential service water performance that affected both units.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**D.C. COOK 2**	Nameplate Rating (MWe):	**1133**
Location:	**Berrien County, Michigan**	MDC Net (MWe):	**1060**
Operator:	**Indiana Michigan Power Company**	Cumul. Avail. Factor:	**62.0**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**57.0**
Construction Permit:	**3/25/1969**	Cumul. Forced Outage Rate:	**24.5**
Operating License Date:	**12/23/1977**	2-Year Avg. Cap. Factor (MDC Net):	**68.6**
Commercial Oper. Date:	**7/1/1978**	License Expiration Date:	**12/23/2017**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 1997	Dec 2000	The unit was taken off-line, shut down, and defueled on September 8, 1997 to resolve design basis questions discovered during a NRC architect and engineering inspection. The plant was shut down for 1201 days. See Supplement 1 to NUREG/CR-6577 for additional information for years 1997–1999.
Jan 2001		The unit completed a plant technical specification required shutdown and remained shut down for four days due to the inability to withdraw control rod shutdown bank D to greater than 225 steps (indicated).
Aug 2001	Oct 2001	The plant was shut down for a 40 day forced outage due to degraded essential service water (ESW) system performance that affected both emergency diesel generators and other components serviced by the ESW system.

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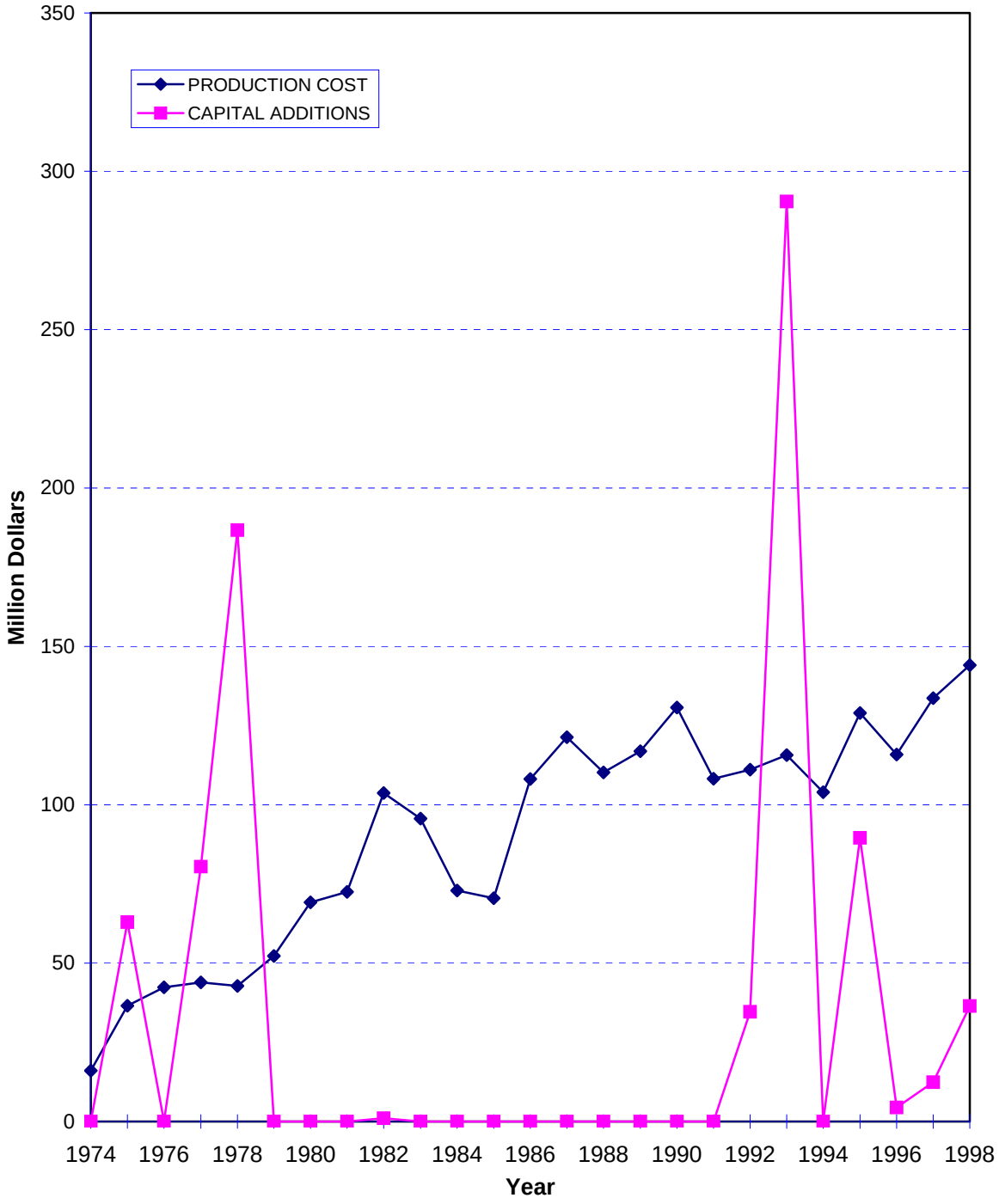
COOPER

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**COOPER**	Nameplate Rating (MWe):	**836**
Location:	**Nemaha County, Nebraska**	MDC Net (MWe):	**764**
Operator:	**Nebraska Public Power District**	Cumul. Avail. Factor:	**75.2**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**66.4**
Construction Permit:	**6/4/1968**	Cumul. Forced Outage Rate:	**7.3**
Operating License Date:	**1/18/1974**	2-Year Avg. Cap. Factor (MDC Net):	**74.2**
Commercial Oper. Date:	**7/1/1974**	License Expiration Date:	**1/18/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000		The plant had a forced outage for seven days to investigate increasing leakage in primary containment.
Mar 2000	May 2000	The unit was taken off-line and shut down for 86.5 days for a refueling outage. The startup from the refueling outage was delayed to resolve equipment qualification issues.
Oct 2000		The main power transformer failed from insulation wear and caused a main generator load reject transient and resulted in a reactor scram. This caused a forced outage of almost six days to investigate and repair the transformer failure.
Dec 2000		A mispositioned test switch during a Division I logic surveillance test caused a 4 KV bus to lose power and shed its loads. As a result, a service water pump tripped, a control rod drive pump tripped, several motor control centers lost power, a reactor recirculation pump motor generator tripped, a reactor water cleanup system pump tripped, one train of off gas tripped, and one train of reactor building exhaust tripped. All this caused the plant to be placed in single loop operation.
Mar 2001		Scheduled Mid-Cycle outage for 14.5 days for removal and replacement of a failed fuel bundle. The reactor was manually scrammed as part of the shutdown procedure for the outage. Several automatic engineered safety feature actuations were experienced subsequent to the shutdown causing reactor water level control problems.

COOPER – (continued)

Sep 2001		A lightning strike on a transmission line seven miles from Cooper Station and a breaker failure during the ensuing transient caused the startup station service transformer to de-energize. This, in turn, de-energized and tripped a reactor recirculation system motor-generator set and its associated reactor recirculation pump. The plant was placed in single loop operation because of the partial loss of offsite power. The transformer, which connects to both 161 KV and 345 KV transmission lines, was subsequently declared inoperable. Following this the T2 auto-transformer was isolated and perturbations were experienced on the 69 KV transmission system. As a result, the emergency station service transformer was also declared inoperable. The emergency source of power was placed back in operation within one minute and the station service transformer was placed back in service the next day.
Nov 2001	Jan 2002	The unit was taken off-line and shut down for 58.5 days for a refueling outage.

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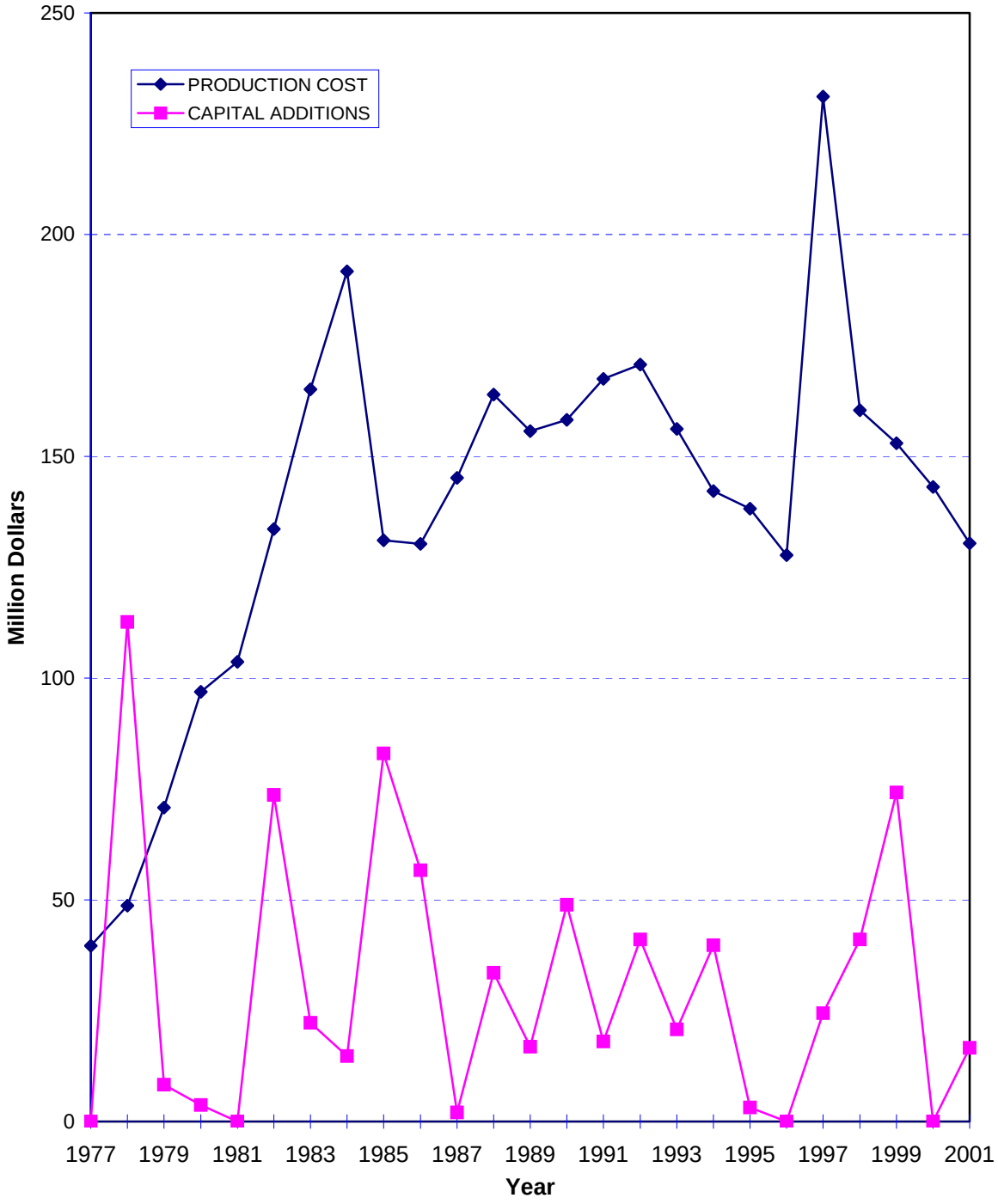
CRYSTAL RIVER 3

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

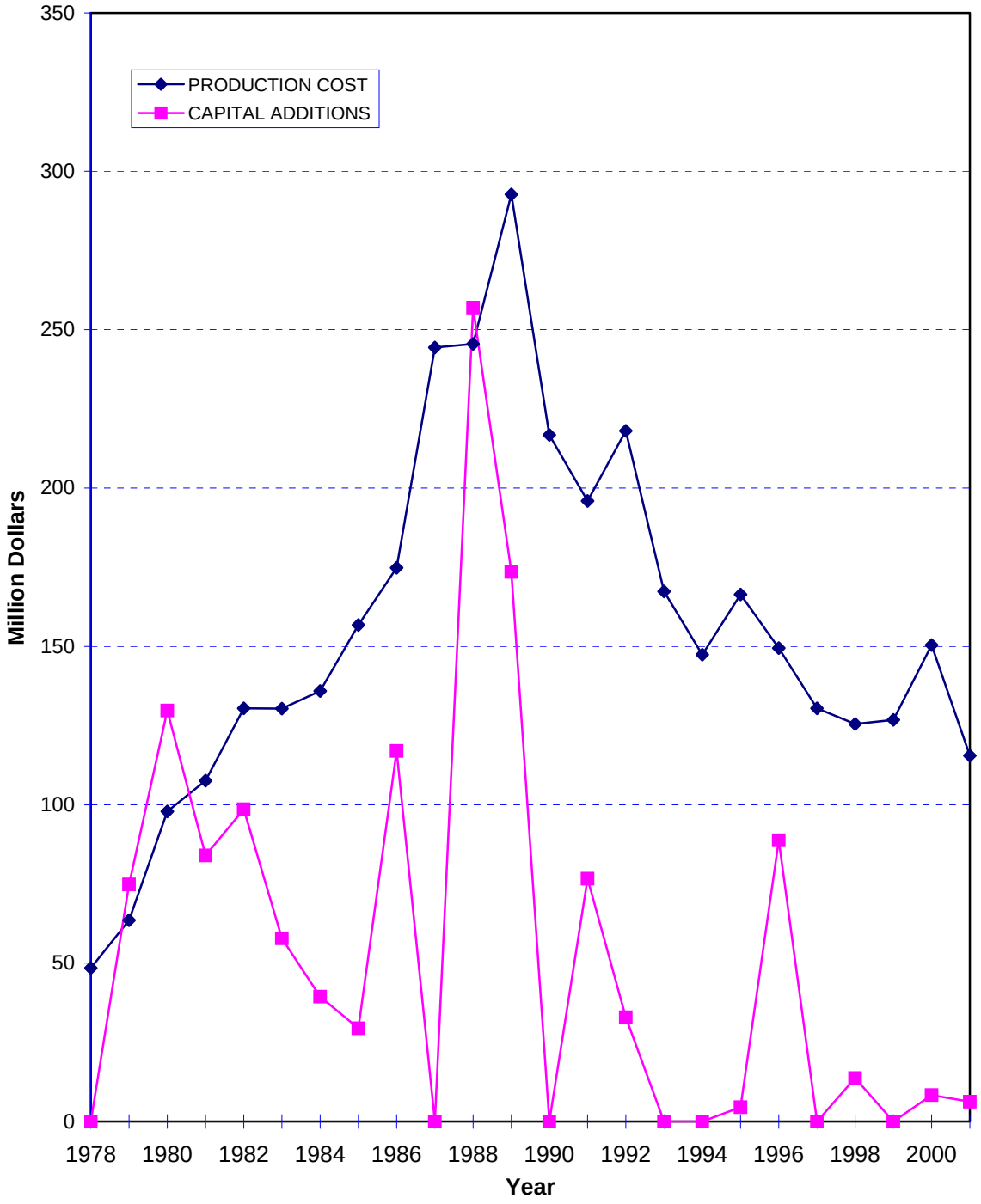
Unit:	**CRYSTAL RIVER 3**	Nameplate Rating (MWe):	**890**
Location:	**Citrus County, Florida**	MDC Net (MWe):	**834**
Operator:	**Florida Power Corporation**	Cumul. Avail. Factor:	**67.7**
Type:	**Babcock and Wilcox PWR**	Cumul. Cap. Factor (MDC Net):	**62.8**
Construction Permit:	**9/25/1968**	Cumul. Forced Outage Rate:	**18.5**
Operating License Date:	**1/28/1977**	2-Year Avg. Cap. Factor (MDC Net):	**93.2**
Commercial Oper. Date:	**3/13/1977**	License Expiration Date:	**12/3/2016**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000		The plant was taken off-line for seven days to repair a reactor coolant valve. Work was also performed on a decay heat valve, two condensate pumps and two waterboxes.
May 2001	Jun 2001	Planned maintenance outage for 14 days to repair a defective feedwater check valve and a leaking decay heat valve.
Sep 2001	Oct 2001	The unit was taken off-line and shut down for 26.5 days for a refueling outage. During the startup following the outage, the reactor scrammed on loss of auxiliary steam. The auxiliary steam for the nuclear power plant was being supplied by a fossil-powered sister plant, which subsequently tripped off-line.

DAVIS BESSE

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

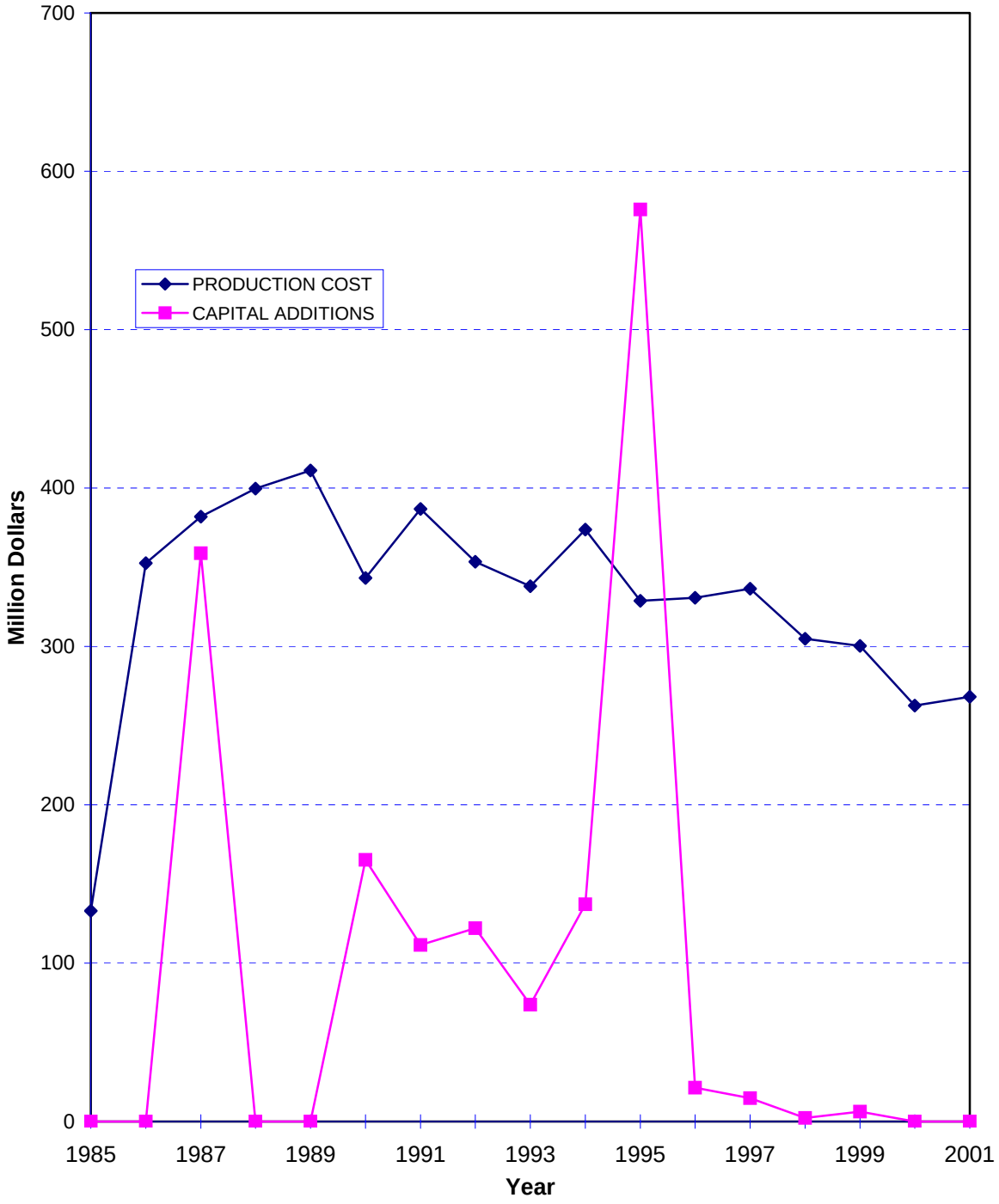
Unit:	**DAVIS-BESSE 1**	Nameplate Rating (MWe):	**925**
Location:	**Ottawa County, Ohio**	MDC Net (MWe):	**882**
Operator:	**FirstEnergy Nuclear Operating Company**	Cumul. Avail. Factor:	**71.0**
Type:	**Babcock and Wilcox PWR**	Cumul. Cap. Factor (MDC Net):	**65.3**
Construction Permit:	**3/24/1971**	Cumul. Forced Outage Rate:	**13.7**
Operating License Date:	**4/22/1977**	2-Year Avg. Cap. Factor (MDC Net):	**93.4**
Commercial Oper. Date:	**7/31/1978**	License Expiration Date:	**4/22/2017**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	May 2000	The unit was taken off-line and shut down for 48 days for a refueling outage. The licensee declared an unusual event during the outage when off-site power was lost to the 13.8 KV busses during a bus transfer test.

DIABLO CANYON
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**DIABLO CANYON 1**	Nameplate Rating (MWe):	**1137**
Location:	**San Luis Obispo County, California**	MDC Net (MWe):	**1087**
Operator:	**Pacific Gas & Electric Company**	Cumul. Avail. Factor:	**86.3**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**82.0**
Construction Permit:	**4/23/1968**	Cumul. Forced Outage Rate:	**2.9**
Operating License Date:	**11/2/1984**	2-Year Avg. Cap. Factor (MDC Net):	91.6
Commercial Oper. Date:	**5/7/1985**	License Expiration Date:	**9/22/2021**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
May 2000		The licensee declared an unusual event when auxiliary transformer former #1-1 exploded and caught fire. The loss of offsite power caused three unit emergency diesel generators to automatically start. The 12 KV bus trip caused a unit trip and repairs required a subsequent 12 days forced outage.
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 41 days for a refueling outage. The plant had an automatic trip during startup surveillance testing following the outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**DIABLO CANYON 2**	Nameplate Rating (MWe):	**1164**
Location:	**San Luis Obispo County, California**	MDC Net (MWe):	**1087**
Operator:	**Pacific Gas & Electric Company**	Cumul. Avail. Factor:	**87.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**84.6**
Construction Permit:	**12/9/1970**	Cumul. Forced Outage Rate:	**3.3**
Operating License Date:	**8/26/1985**	2-Year Avg. Cap. Factor (MDC Net):	**93.6**
Commercial Oper. Date:	**3/13/1986**	License Expiration Date:	**4/26/2025**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000		A failure of the extraction steam bellows inside the main condenser resulted in salt water leaks from failed condenser tubes, requiring a shutdown to replace failed bellows. The forced outage lasted almost ten days.
Apr 2001	May 2001	The unit was taken off-line and shut down for 29.5 days for a refueling outage.

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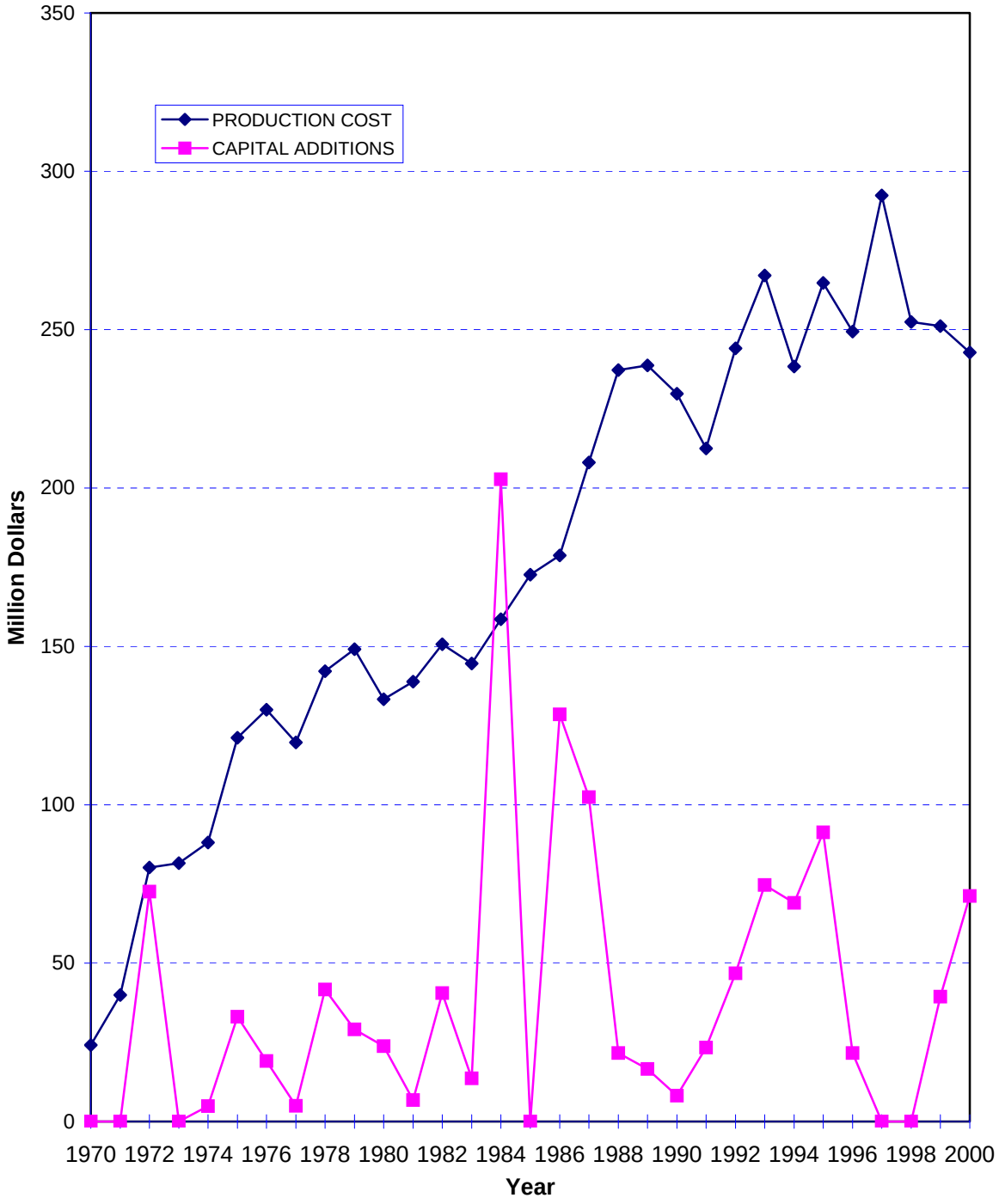
DRESDEN
(Units 2 and 3*)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



*Includes Unit 1 cost thru 1984.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**DRESDEN 2**	Nameplate Rating (MWe):	**840**
Location:	**Grundy County, Illinois**	MDC Net (MWe):	**772**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**72.4**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**61.1**
Construction Permit:	**1/10/1966**	Cumul. Forced Outage Rate:	**12.3**
Operating License Date:	**12/22/1969**	2-Year Avg. Cap. Factor (MDC Net):	**95.6**
Commercial Oper. Date:	**6/9/1970**	License Expiration Date:	**1/10/2006**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2001		The main power transformer internal gas generation rate increased, which indicated internal damage. The unit was taken off-line and internal repairs were performed on the transformer. The forced outage lasted almost nine days.
Oct 2001	Nov 2001	The unit was taken off-line and shut down for 20 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**DRESDEN 3**	Nameplate Rating (MWe):	**840**
Location:	**Grundy County, Illinois**	MDC Net (MWe):	**773**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**70.6**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**60.0**
Construction Permit:	**10/14/1966**	Cumul. Forced Outage Rate:	**12.9**
Operating License Date:	**3/2/1971**	2-Year Avg. Cap. Factor (MDC Net):	**94.6**
Commercial Oper. Date:	**11/16/1971**	License Expiration Date:	**1/12/2011**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 18 days for a refueling outage.
Jul 2001		The licensee declared a general Station Emergency Plan Alert and operators initiated a manual scram from 100% power due to increasing drywell pressure. The increased drywell pressure was caused by the failure of a reactor building closed cooling water system temperature control valve.
Dec 2001		Unidentified leakage continued following a plant startup. As a result, the plant was shut down for an eight day forced outage. The leak was determined to be coming from the vessel head.

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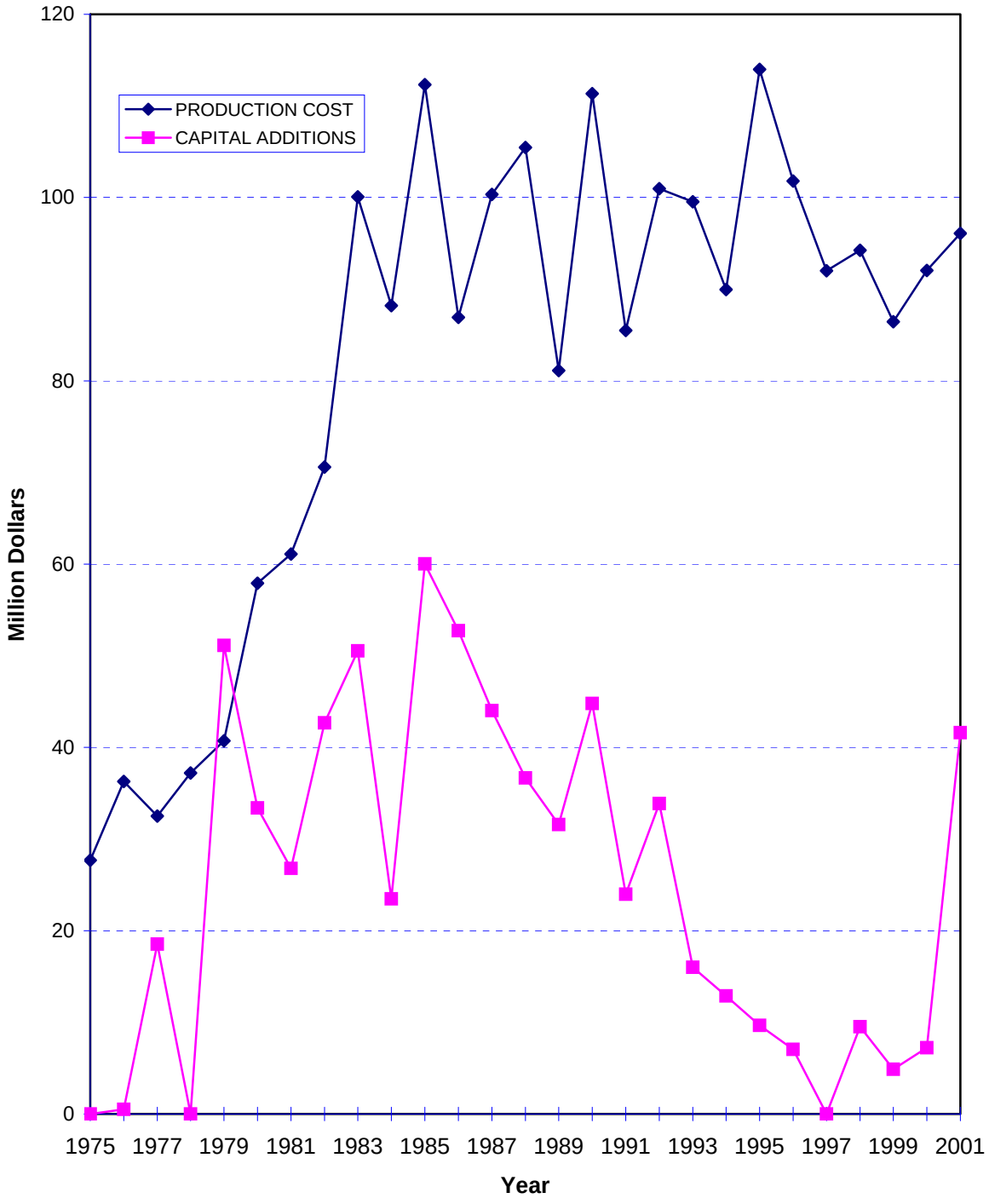
DUANE ARNOLD

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

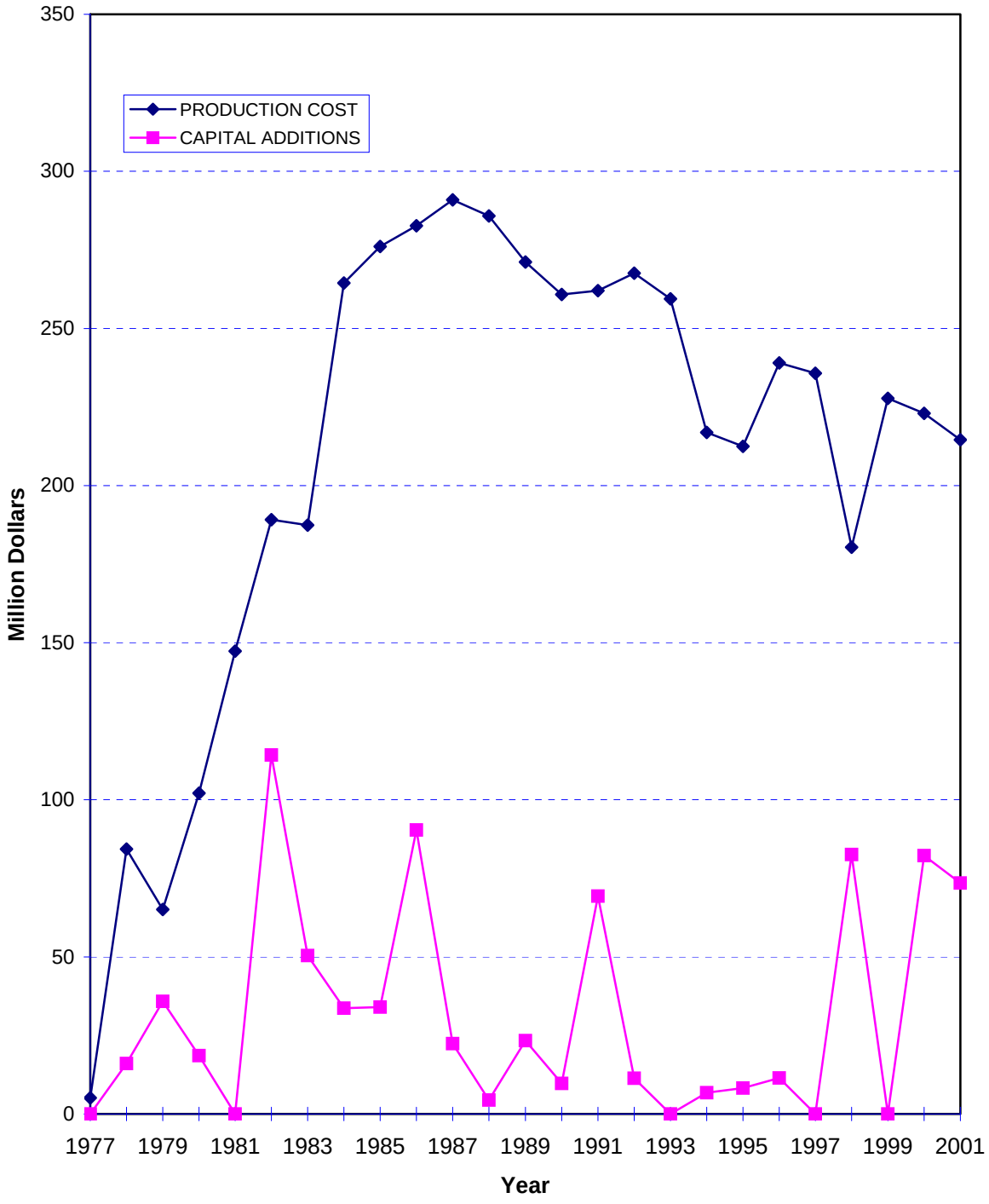
Unit:	**DUANE ARNOLD**	Nameplate Rating (MWe):	**566**
Location:	**Linn County, Iowa**	MDC Net (MWe):	**566**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**77.1**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**62.5**
Construction Permit:	**6/22/1970**	Cumul. Forced Outage Rate:	**8.6**
Operating License Date:	**2/22/1974**	2-Year Avg. Cap. Factor (MDC Net):	**87.7**
Commercial Oper. Date:	**2/1/1975**	License Expiration Date:	**2/21/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000		A false low level signal generated during restoration of a level transmitter instrument to service following calibration caused a scram signal to be generated and resulted in a five day forced outage.
Jun 2000		A loose connection in the generator current transformer caused an arc and subsequent short circuit. The short circuit induced a trip of the differential current lockout trip and caused a generator load reject and reactor scram from 100% power.
Apr 2001	May 2001	The unit was taken off-line and shut down for 44 days for a refueling outage.
Oct 2001		The operators manually scrammed the reactor due to lowering reactor water level following a main feedwater pump trip. A forced outage of six days was required to affect repairs.

JOSEPH M. FARLEY
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**JOSEPH M. FARLEY 1**	Nameplate Rating (MWe):	**860**
Location:	**Houston County, Alabama**	MDC Net (MWe):	**833**
Operator:	**Southern Nuclear Operating Company**	Cumul. Avail. Factor:	**80.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**76.4**
Construction Permit:	**8/16/1972**	Cumul. Forced Outage Rate:	**4.7**
Operating License Date:	**6/25/1977**	2-Year Avg. Cap. Factor (MDC Net):	**79.6**
Commercial Oper. Date:	**12/1/1977**	License Expiration Date:	**6/25/2017**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	May 2000	The unit was taken off-line and shut down for almost 84 days for a refueling outage. Just prior to the outage, an automatic reactor trip resulted from low steam generator level after the only operating feed pump tripped on low suction pressure.
Oct 2001	Nov 2001	The unit was taken off-line and shut down for 41 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**JOSEPH M. FARLEY 2**	Nameplate Rating (MWe):	**860**
Location:	**Houston County, Alabama**	MDC Net (MWe):	**842**
Operator:	**Southern Nuclear Operating Company**	Cumul. Avail. Factor:	**85.8**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**81.3**
Construction Permit:	**8/16/1972**	Cumul. Forced Outage Rate:	**2.9**
Operating License Date:	**3/31/1981**	2-Year Avg. Cap. Factor (MDC Net):	**89.1**
Commercial Oper. Date:	**7/30/1981**	License Expiration Date:	**3/31/2021**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2001	May 2001	The unit was taken off-line and shut down for 74 days for a refueling outage.
Jun 2001		A generator neutral transformer electrical-connection bolt failed and caused a reactor scram from 100% power. The generator neutral transformer leads are disconnected and reconnected each refueling outage. The connection bolt had been overtorqued during previous refueling outages because the technicians had mis-identified the silicon bronze bolt as steel. Three days after this event, after replacing a light bulb in a pushbutton, an operator erred while reinstalling the turbine latch pushbutton and caused another reactor scram from 100% power.

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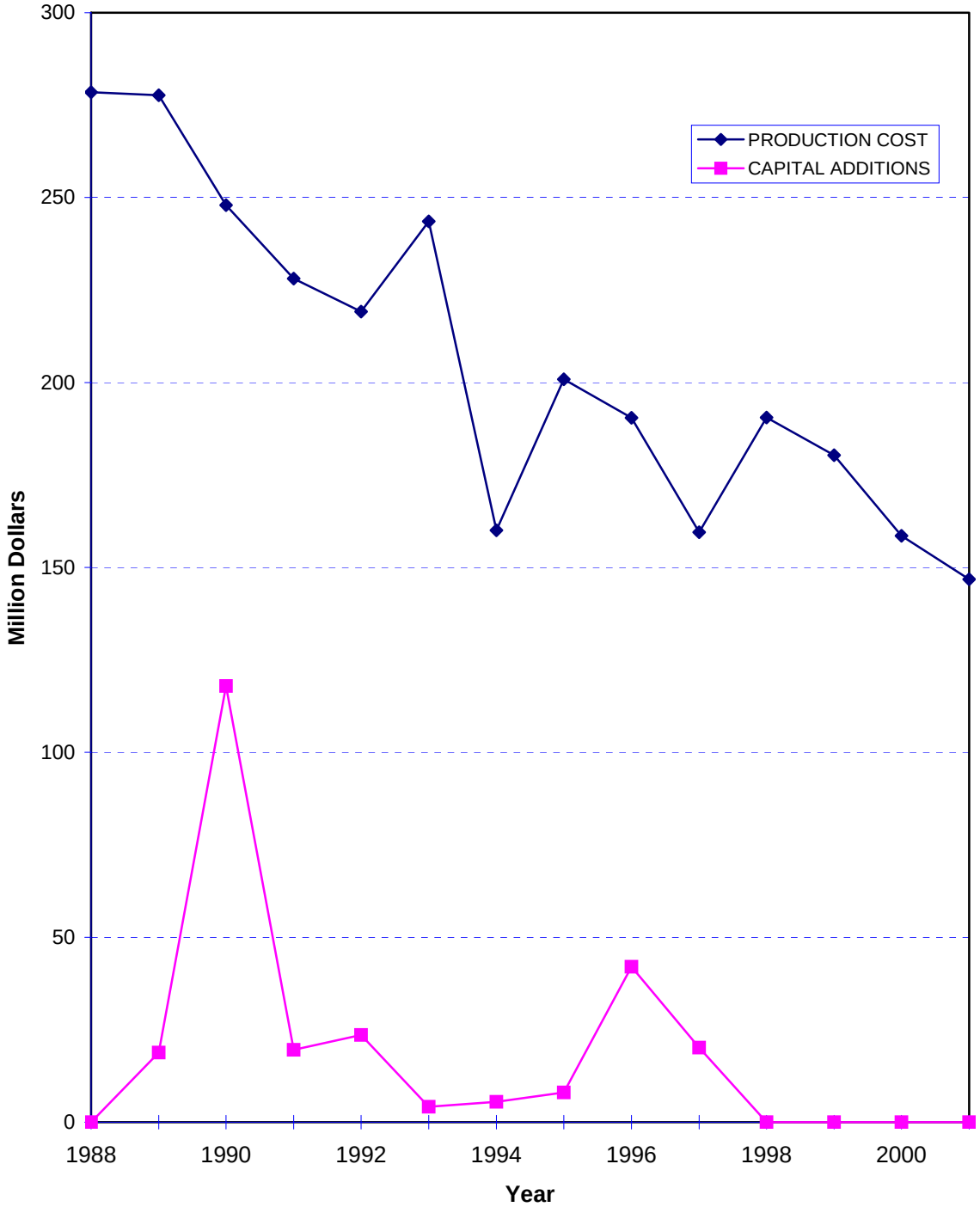
FERMI 2

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

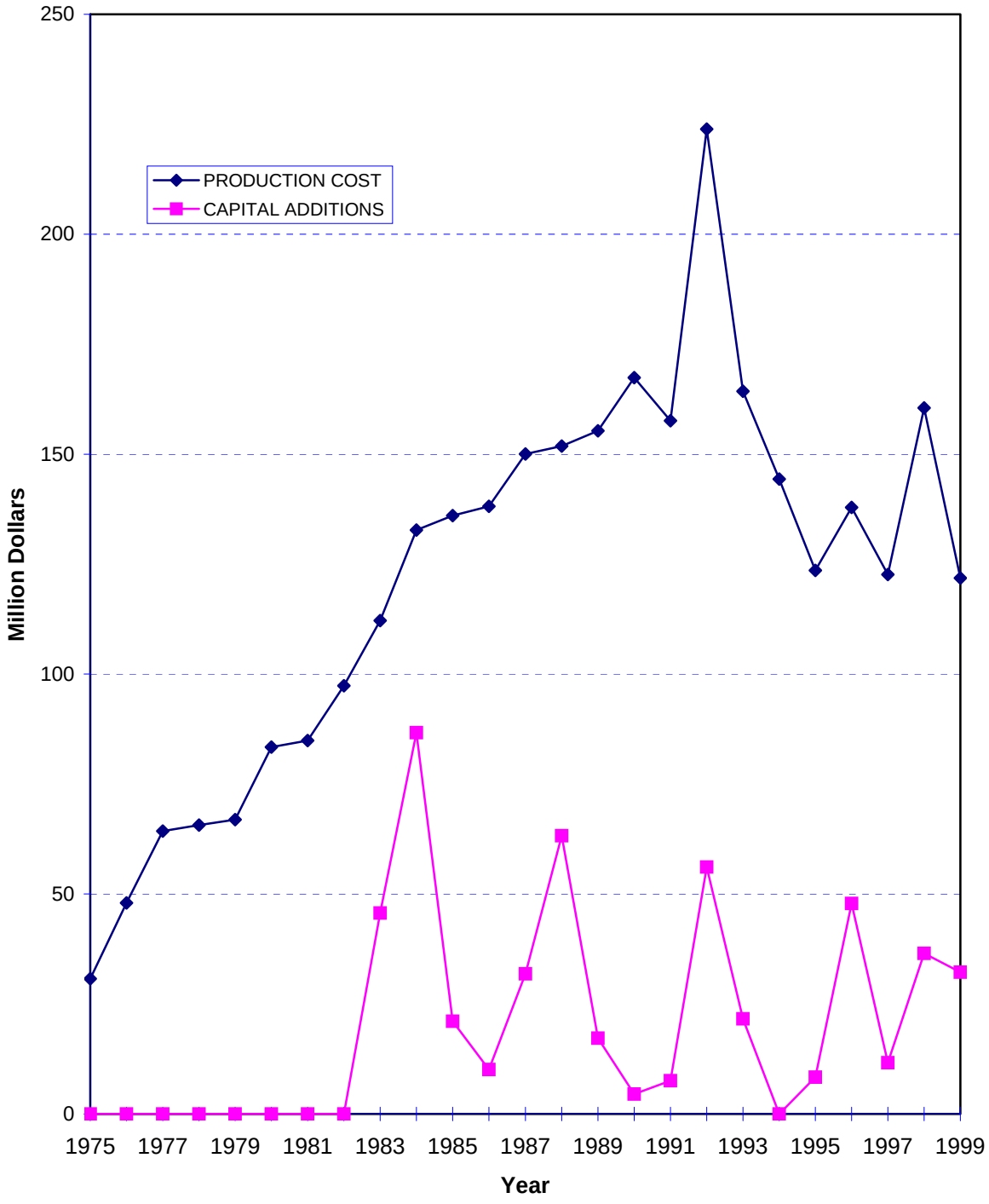
Unit:	**FERMI 2**	Nameplate Rating (MWe):	**1179**
Location:	**Monroe County, Michigan**	MDC Net (MWe):	**1089**
Operator:	**Detroit Edison Company**	Cumul. Avail. Factor:	**71.9**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**65.5**
Construction Permit:	**9/26/1972**	Cumul. Forced Outage Rate:	**16.7**
Operating License Date:	**7/15/1985**	2-Year Avg. Cap. Factor (MDC Net):	**88**
Commercial Oper. Date:	**1/23/1988**	License Expiration Date:	**3/20/2025**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	May 2000	The plant scrammed after a manual trip of reactor recirculation pump A, resulting in a single loop operation at low power. Following that, the unit was taken off-line and shut down for 52 days for a refueling outage.
Oct 2001	Nov 2001	The unit was taken off-line and shut down for 34 days for a refueling outage.

FITZPATRICK

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

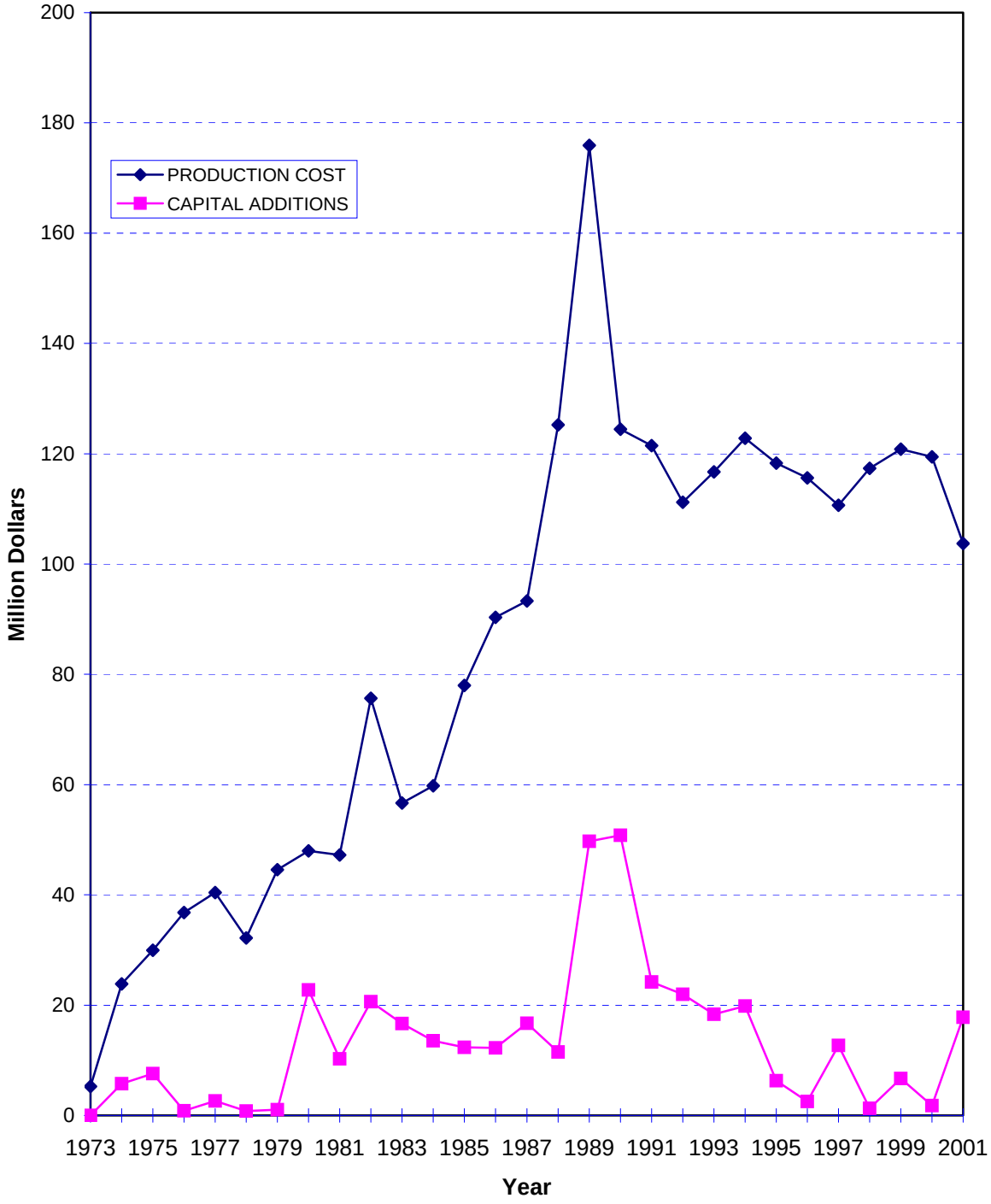
Unit:	**JAMES A. FITZPATRICK**	Nameplate Rating (MWe):	**883**
Location:	**Oswego County, New York**	MDC Net (MWe):	**813**
Operator:	**Entergy Nuclear Operations, Inc.**	Cumul. Avail. Factor:	**72.5**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**66.0**
Construction Permit:	**5/20/1970**	Cumul. Forced Outage Rate:	**10.0**
Operating License Date:	**10/17/1974**	2-Year Avg. Cap. Factor (MDC Net):	**92**
Commercial Oper. Date:	**7/28/1975**	License Expiration Date:	**10/17/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000		The plant went into a forced outage that lasted for five days following an automatic scram due to a manual turbine trip for loss of vacuum in the condenser when the recombiner bypasss valve failed closed. The failed valve was repaired and an equipment failure evaluation was completed.
Aug 2000	Sep 2000	The plant was operating at 50% power because a reactor feedwater pump was out of service. An electrohydraulic leak on the main turbine and a steam leak on the suction flow meter of the remaining operating reactor feedwater pump caused a plant shutdown. A four day forced outage was needed to repair a damaged o-ring and evaluate an extent of condition.
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 38 days for a refueling outage.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for five days for a planned maintenance outage.

FORT CALHOUN 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

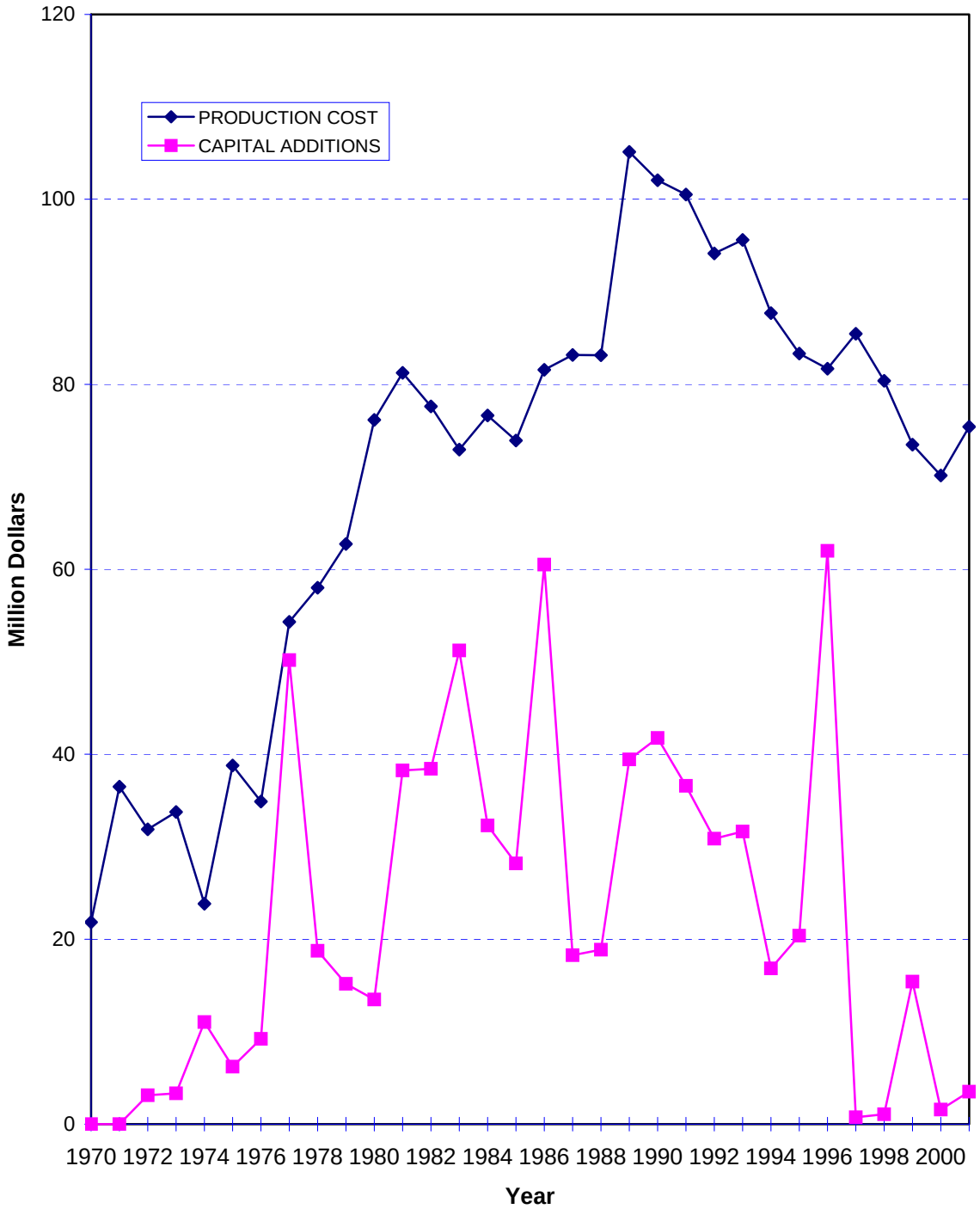
Unit:	**FORT CALHOUN 1**	Nameplate Rating (MWe):	**502**
Location:	**Washington County, Nebraska**	MDC Net (MWe):	**478**
Operator:	**Omaha Public Power District**	Cumul. Avail. Factor:	**79.8**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**71.9**
Construction Permit:	**6/7/1968**	Cumul. Forced Outage Rate:	**3.8**
Operating License Date:	**8/9/1973**	2-Year Avg. Cap. Factor (MDC Net):	**88.5**
Commercial Oper. Date:	**8/9/1973**	License Expiration Date:	**8/9/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Nov 2000	The unit was shut down for 23 days for a forced outage to replace a degraded reactor coolant pump seal on reactor coolant pump, RCP-3A.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for 44 days for a refueling outage. The station was shut down one day early because of a secondary system chemistry transient.

ROBERT E. GINNA

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

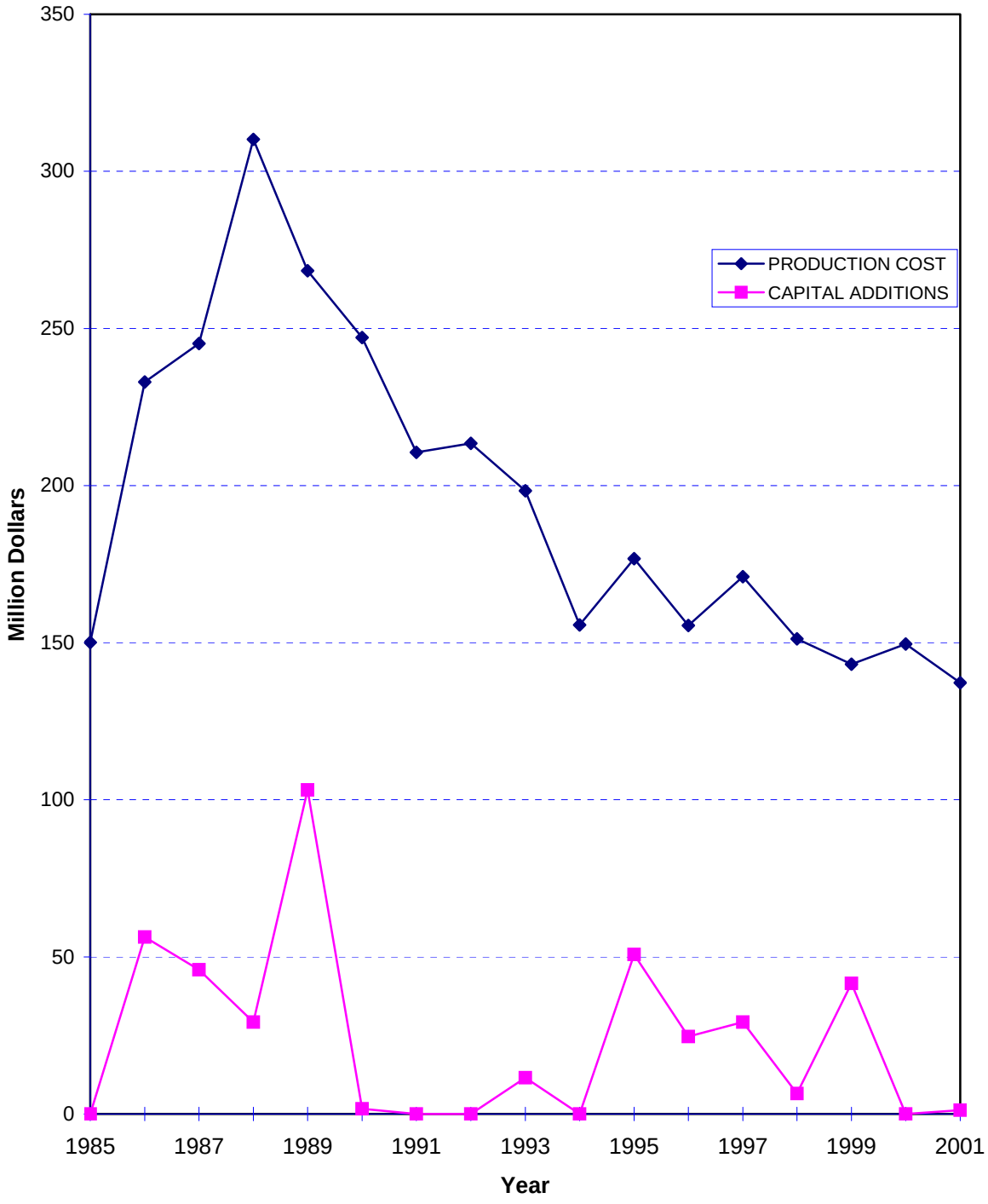
Unit:	**ROBERT E. GINNA**	Nameplate Rating (MWe):	**517**
Location:	**Wayne County, New York**	MDC Net (MWe):	480
Operator:	**Rochester Gas & Electric Corporation**	Cumul. Avail. Factor:	**81.0**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**76.6**
Construction Permit:	**4/25/1966**	Cumul. Forced Outage Rate:	**4.8**
Operating License Date:	**9/19/1969**	2-Year Avg. Cap. Factor (MDC Net):	**96.2**
Commercial Oper. Date:	**7/1/1970**	License Expiration Date:	**9/18/2009**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 32 days for a refueling outage. The reactor was manually tripped just prior to the outage due to a blown fuse in a nuclear instrument intermediate range monitor circuit.

GRAND GULF 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

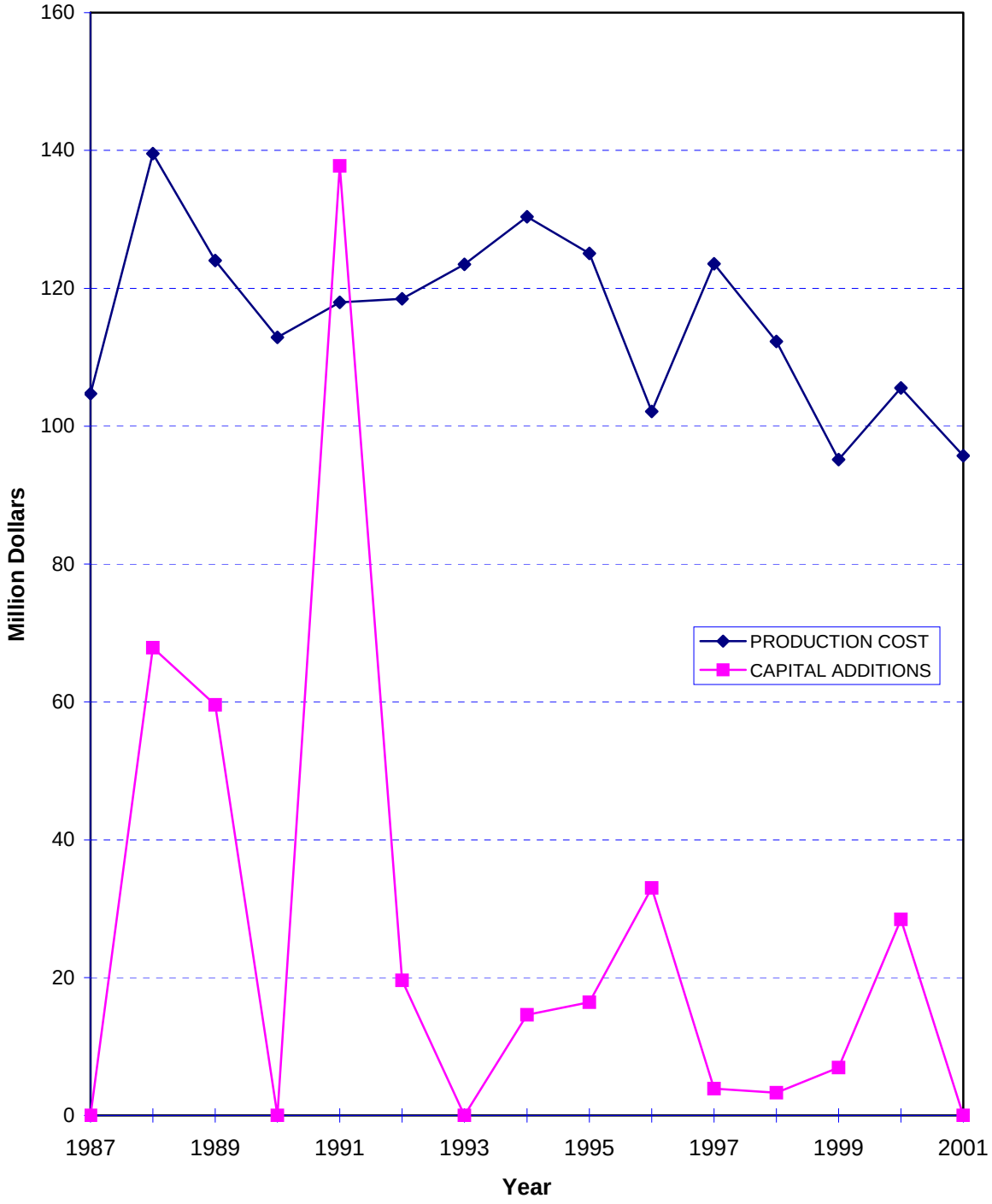
Unit:	**GRAND GULF 1**	Nameplate Rating (MWe):	**1373**
Location:	**Claiborne County, Mississippi**	MDC Net (MWe):	**1210**
Operator:	**Entergy Operations, Inc.**	Cumul. Avail. Factor:	**82.9**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**78.0**
Construction Permit:	**9/4/1974**	Cumul. Forced Outage Rate:	**5.1**
Operating License Date:	**11/1/1984**	2-Year Avg. Cap. Factor (MDC Net):	**97.1**
Commercial Oper. Date:	**7/1/1985**	License Expiration Date:	**6/16/2022**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000		A ground fault in an offsite switchyard caused a 500 KV circuit breaker to fail and trip open. The switchyard directly feeds the Grand Gulf Nuclear Station switchyard, and the resulting grid voltage anomaly caused a main generator load reject transient. The reactor scrammed from 100% power and the reactor core isolation cooling system automatically initiated and injected water into the reactor pressure vessel.
Apr 2001	May 2001	The unit was taken off-line and shut down for almost 22 days for a refueling outage.
Aug 2001		A phase-to-phase fault in an offsite switchyard caused a transient on the 500 KV feeder to Grand Gulf Nuclear Station. The resulting grid transient caused a generator load reject transient and subsequent reactor scram from 100% power of the plant. Following the scram, the end-of-cycle reactor recirculation pump trip unexpectedly did not occur.
Aug 2001	Sep 2001	The plant was shut down for 6.5 days to replace a recirculation pump seal.

SHEARON HARRIS 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

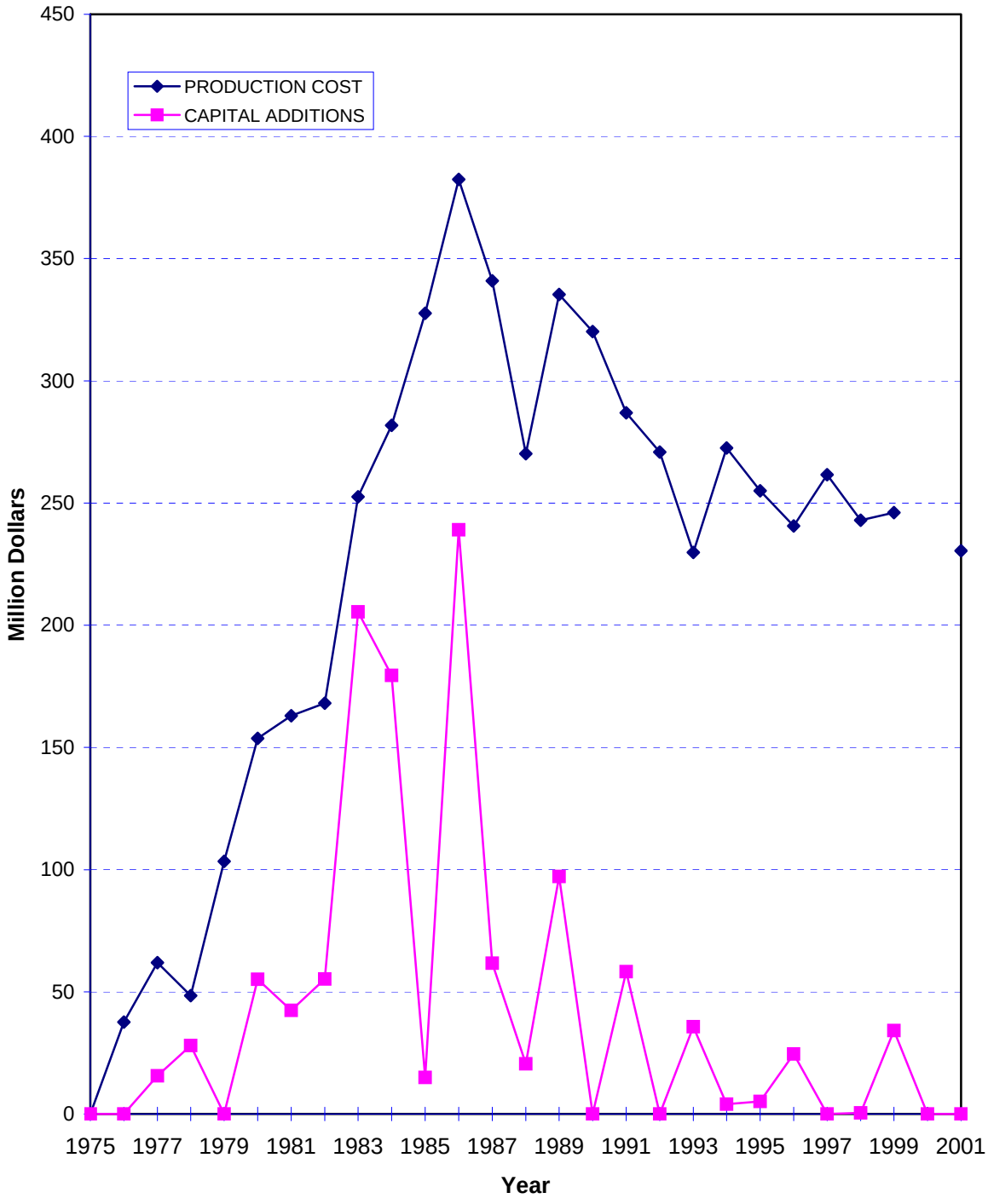
Unit:	**SHEARON HARRIS 1**	Nameplate Rating (MWe):	**951**
Location:	**Wake & Chapham County, North Carolina**	MDC Net (MWe):	**860**
Operator:	**Carolina Power & Light Company**	Cumul. Avail. Factor:	**84.2**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**82.0**
Construction Permit:	**1/27/1978**	Cumul. Forced Outage Rate:	**2.7**
Operating License Date:	**1/12/1987**	2-Year Avg. Cap. Factor (MDC Net):	**81.2**
Commercial Oper. Date:	**5/2/1987**	License Expiration Date:	**10/14/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	May 2000	The unit was taken off-line and shut down for 27 days for a refueling outage.
Sep 2001	Jan 2002	The unit was taken off-line and shut down for more than three months (101 days) for a refueling outage.

EDWIN I. HATCH
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**EDWIN I. HATCH 1**	Nameplate Rating (MWe):	**850**
Location:	**Appling County, Georgia**	MDC Net (MWe):	**863**
Operator:	**Southern Nuclear Operating Company**	Cumul. Avail. Factor:	**77.5**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**65.0**
Construction Permit:	**9/30/1969**	Cumul. Forced Outage Rate:	**8.4**
Operating License Date:	**10/13/1974**	2-Year Avg. Cap. Factor (MDC Net):	**91.8**
Commercial Oper. Date:	**12/31/1975**	License Expiration Date:	**8/6/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000	Feb 2000	A feedwater heater inlet valve inadvertently closed, resulting in a reduction of feedwater flow. The closure of the valve was apparently caused by a spurious signal from the valve control switch. The reactor scrammed on low water level and ten of eleven safety/relief valves failed to indicate open in response to control room switch positioning. Apparently, enough water entered the main steam line to flood the safety/relief valves and cause the faulty indication. The plant had a ten day forced outage to investigate and repair the problem.
Jul 2000		The vibration instrument on the #10 bearing for the main turbine failed, causing a false high vibration signal to be generated. A turbine stop valve fast closure signal was generated when the main turbine tripped causing a reactor scram. The subsequent forced outage to perform repairs lasted four days.
Sep 2000	Nov 2000	The unit was shut down for approximately 34 days for the 19th refueling outage.
Mar 2001		A turn-to-turn internal fault on the 1B Unit Auxiliary Transformer caused the transformer to de-energize and resulted in a generator load rejection followed by a reactor scram from 100% power.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**EDWIN I. HATCH 2**	Nameplate Rating (MWe):	**850**
Location:	**Appling County, Georgia**	MDC Net (MWe):	**878**
Operator:	**Southern Nuclear Operating Company**	Cumul. Avail. Factor:	**78.6**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**65.9**
Construction Permit:	**12/27/1972**	Cumul. Forced Outage Rate:	**5.5**
Operating License Date:	**6/13/1978**	2-Year Avg. Cap. Factor (MDC Net):	**87.6**
Commercial Oper. Date:	**9/5/1979**	License Expiration Date:	**6/13/2018**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	Apr 2000	The unit was taken off-line and shut down for 37.5 days for a refueling outage. Following the outage, the operators manually tripped the turbine due to erratic bypass valve operation. The operating crew swapped main turbine electrohydraulic system filters and continued with the unit startup. However, the main turbine tripped again on a low lubricating oil pressure signal. The tolerance on a pressure switch did not reset as expected prior to the turbine reaching 1300 rpm, which was the setpoint for a trip.
Sep 2001	Oct 2001	The unit was taken off-line and shut down for 38.5 days for a refueling outage.
Dec 2001	Jan 2002	Forced outage for six days caused by an automatic scram that occurred due to high neutron flux. The root cause for the event was the failure of a main steam isolation valve due to high cycle fatigue.

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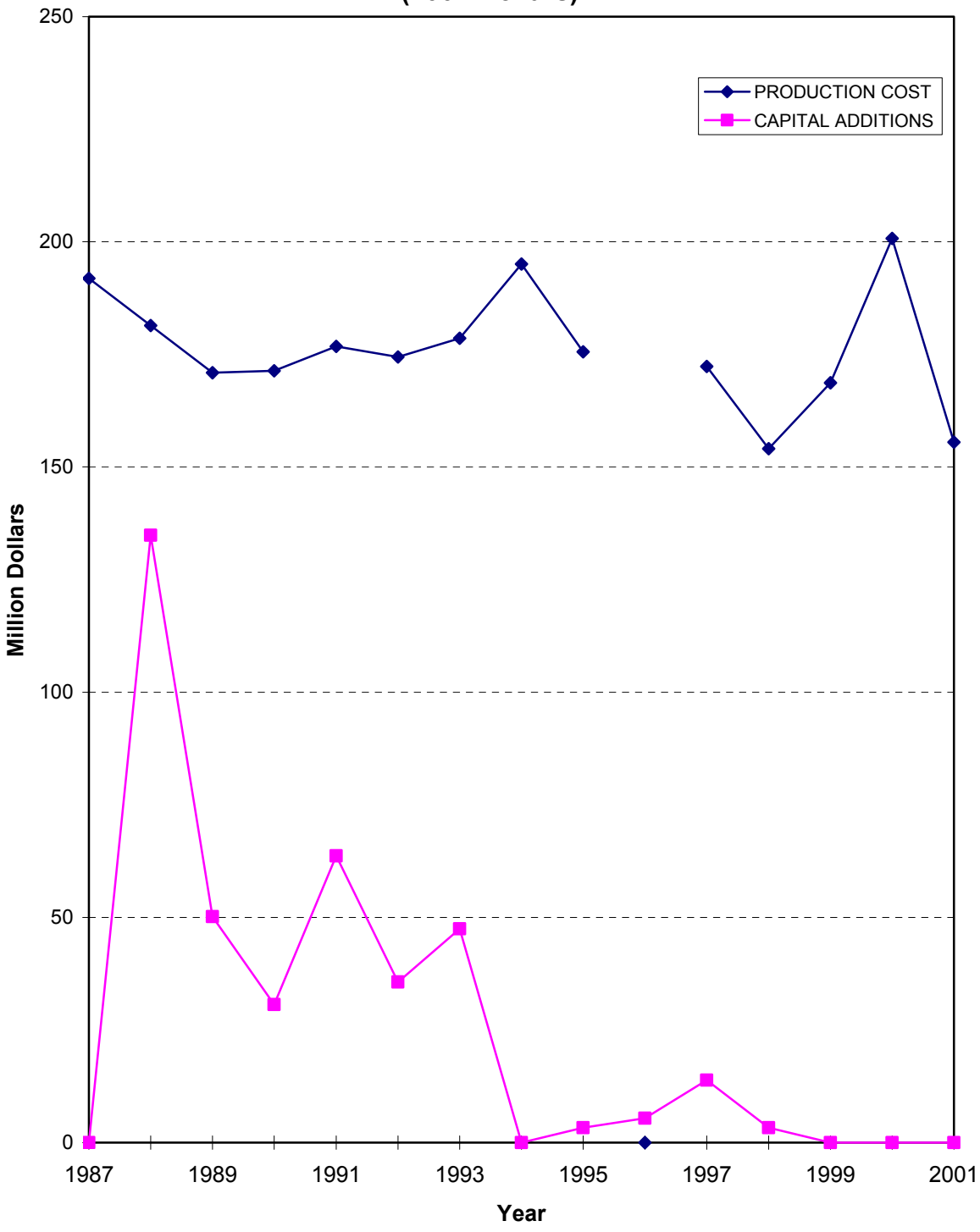
HOPE CREEK 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

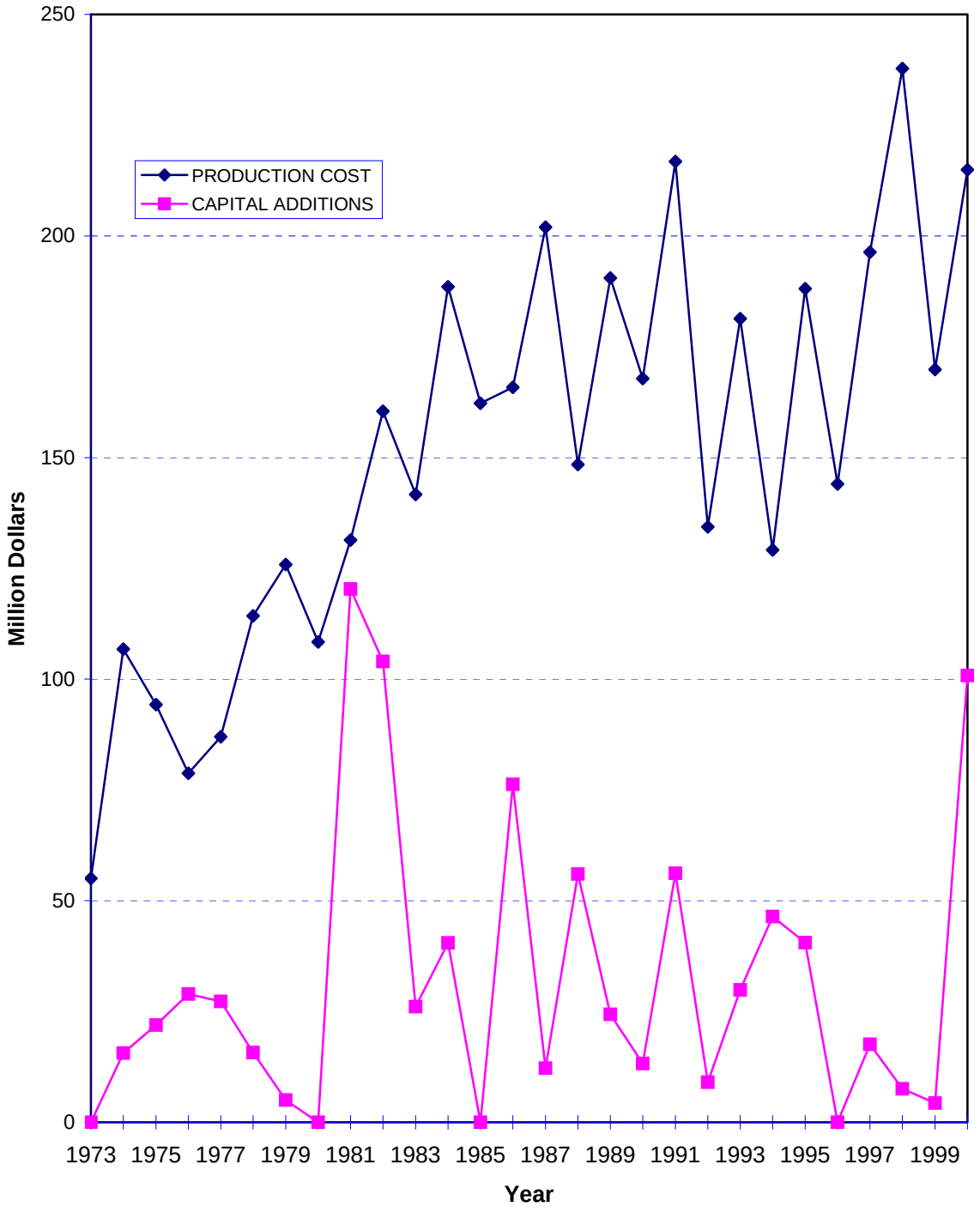
Unit:	**HOPE CREEK 1**	Nameplate Rating (MWe):	**1170**
Location:	**Salem County, New Jersey**	MDC Net (MWe):	**1049**
Operator:	**PSEG Nuclear, LLC**	Cumul. Avail. Factor:	**83.7**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**80.7**
Construction Permit:	**11/4/1974**	Cumul. Forced Outage Rate:	**4.2**
Operating License Date:	**7/25/1986**	2-Year Avg. Cap. Factor (MDC Net):	**84**
Commercial Oper. Date:	**12/20/1986**	License Expiration Date:	**4/11/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	Jun 2000	The unit was taken off-line and shut down for nearly 61 days for a refueling outage. Following the outage, the "C" main transformer failed; however, the reactor remained critical with the plant off-line while repairs were made to the transformer.
May 2001		The plant had a forced outage that lasted for eight days to investigate and repair a main steam isolation valve sealing system inoperability.
Oct 2001	Nov 2001	The unit was taken off-line and shut down for 25 days for a refueling outage.
Dec 2001		The plant was taken off-line and entered an almost five day forced outage to repair a main steam safety valve.

INDIAN POINT 2

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

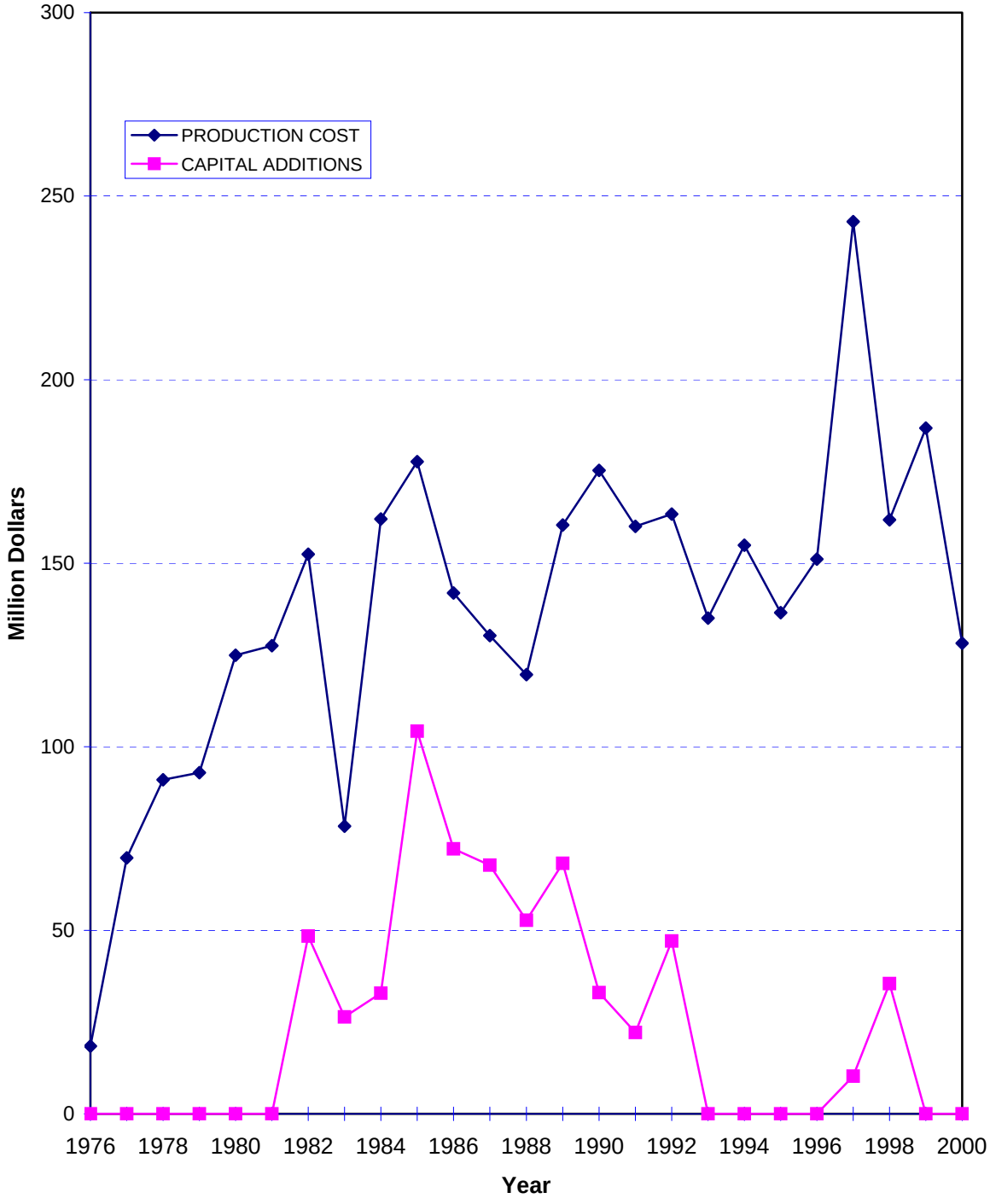
Unit:	**INDIAN POINT 2**	Nameplate Rating (MWe):	**1013**
Location:	**Westchester County, New York**	MDC Net (MWe):	**951**
Operator:	**Entergy Nuclear Operations, Inc.**	Cumul. Avail. Factor:	**67.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**59.4**
Construction Permit:	**10/14/1966**	Cumul. Forced Outage Rate:	14.4
Operating License Date:	**9/28/1973**	2-Year Avg. Cap. Factor (MDC Net):	**52.8**
Commercial Oper. Date:	**8/1/1974**	License Expiration Date:	**9/28/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000	Jan 2001	The reactor was manually tripped due to a tube rupture in #24 steam generator. The unit was brought to cold shutdown to conduct steam generator inspections. Steam generator replacement began August 8, 2000 and was completed by December 2000. The forced outage lasted nearly one year (323 days).
Feb 2000		The NRC proposed an $88,000 fine for a Severity Level II violation involving: (1) failure to translate design basis requirements into procedures for the 480 volt vital bus degraded voltage relays, which led to loss of offsite power to the vital busses; (2) failure to ensure that procedures used to calibrate the breaker trip units for the emergency diesel generators (EDGs) were adequate, which led to the inoperability of one EDG, and (3) failure to take corrective action for a significant condition adverse to quality involving repetitive problems with the reactor protection system over-temperature/delta temperature circuitry which led to initiation of a reactor trip.
Oct 2001	Nov 2001	A planned maintenance outage for almost nine days to conduct repairs on various components.
Dec 2001		A grid disturbance on the North 345 KV line in the Buchanan Switchyard caused the over frequency relays on the plants 345 KV busses to trip. The load was dropped from the main generator and the reactor scrammed, as a result, followed by natural circulation conditions. Two 480 volt busses were de-energized causing the three emergency diesel generators to start and re-energize their respective busses.

INDIAN POINT 3

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

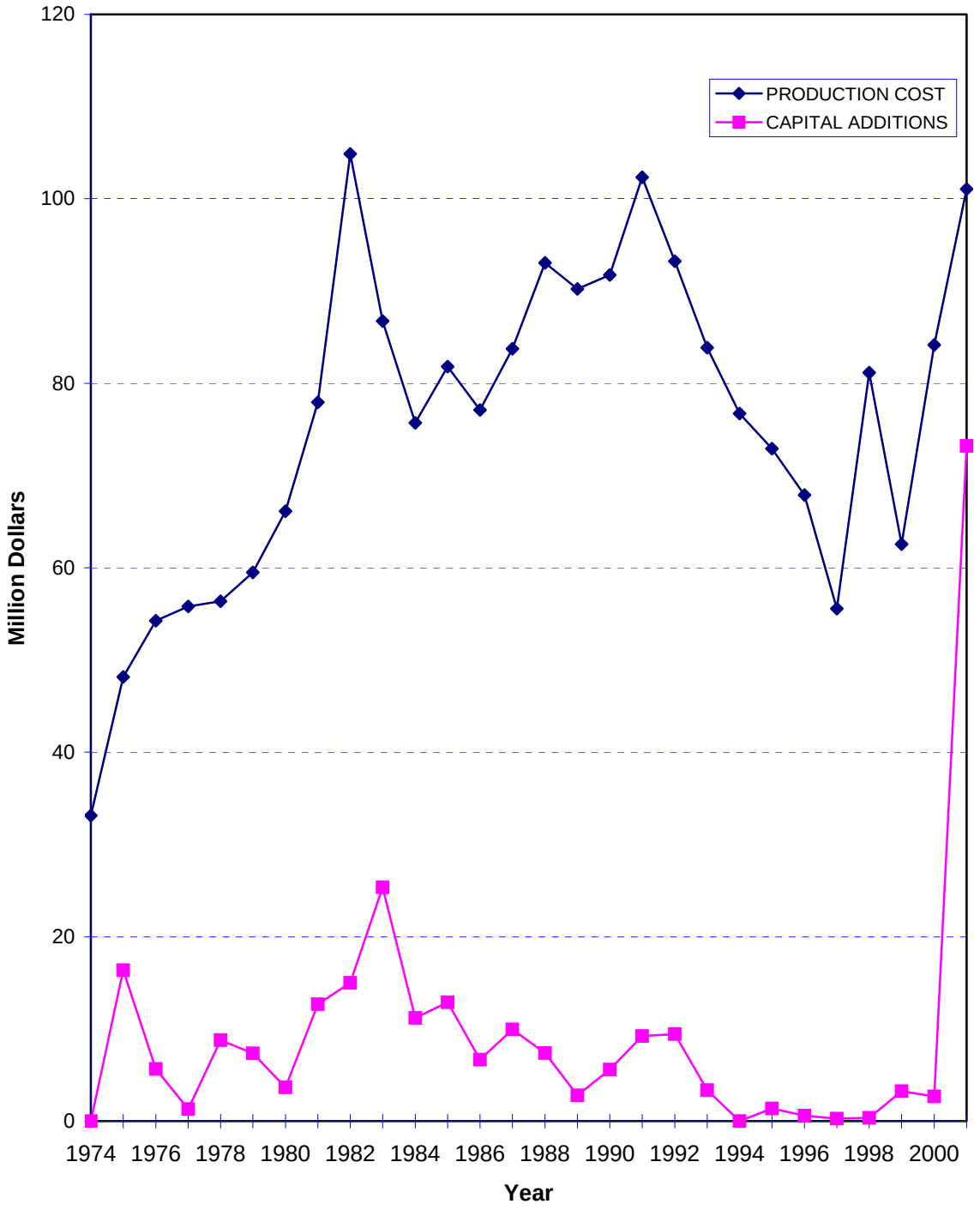
Unit:	**INDIAN POINT 3**	Nameplate Rating (MWe):	**1013**
Location:	**Westchester County, New York**	MDC Net (MWe):	**965**
Operator:	**Entergy Nuclear Operations, Inc.**	Cumul. Avail. Factor:	**60.7**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**55.7**
Construction Permit:	**8/13/1969**	Cumul. Forced Outage Rate:	**23.8**
Operating License Date:	**4/5/1976**	2-Year Avg. Cap. Factor (MDC Net):	**96.7**
Commercial Oper. Date:	**8/30/1976**	License Expiration Date:	**12/15/2015**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2001	May 2001	The unit was taken off-line and the reactor was manually scrammed and shut down for 26 days for refueling outage 11.

KEWAUNEE

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

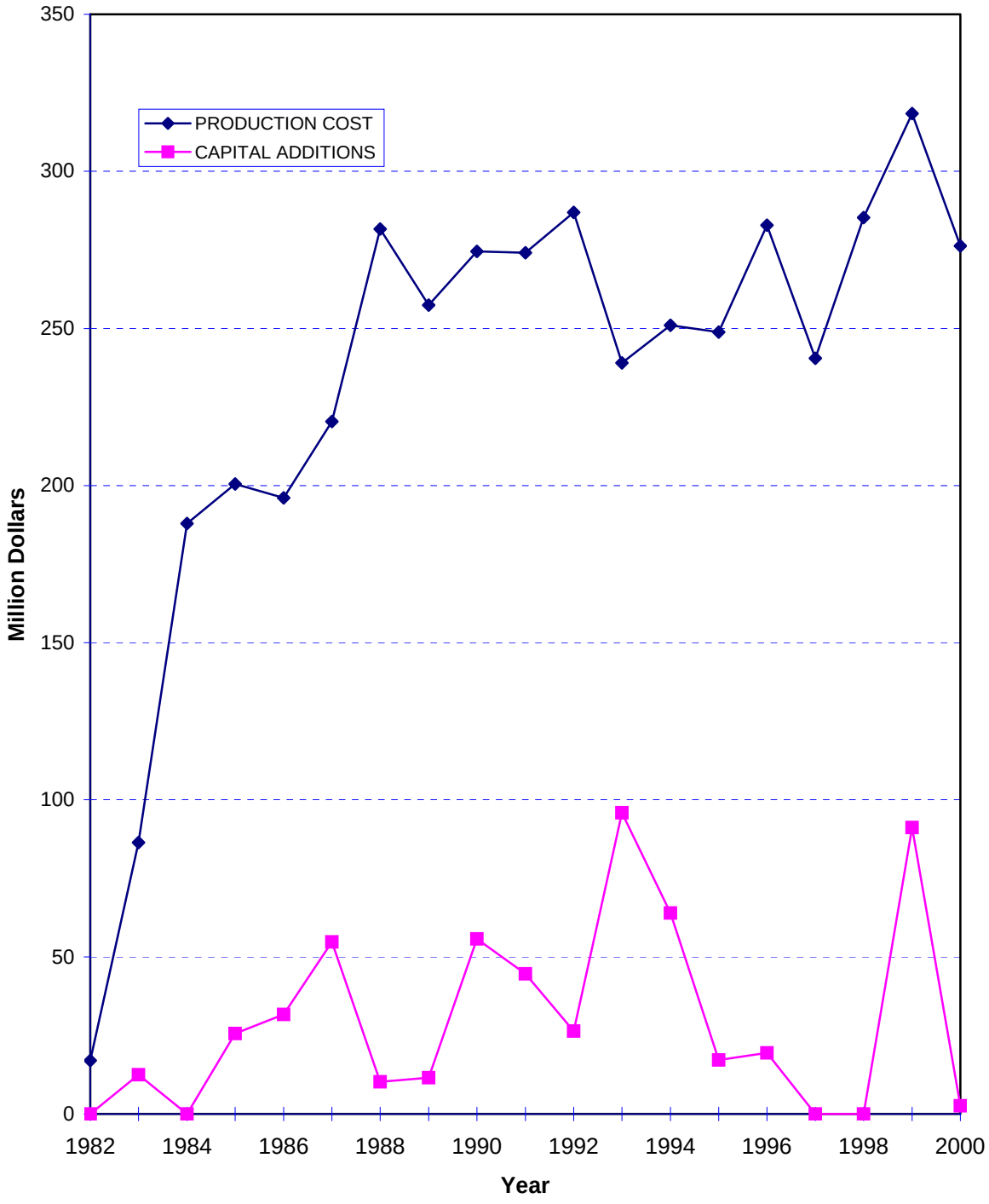
Unit:	**KEWAUNEE**	Nameplate Rating (MWe):	**560**
Location:	**Kewaunee County, Wisconsin**	MDC Net (MWe):	**511**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**84.0**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**82.0**
Construction Permit:	**8/6/1968**	Cumul. Forced Outage Rate:	**1.7**
Operating License Date:	**12/21/1973**	2-Year Avg. Cap. Factor (MDC Net):	**81**
Commercial Oper. Date:	**6/16/1974**	License Expiration Date:	**12/21/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	Jun 2000	The unit was taken off-line and shut down for 41.5 days for a refueling outage.
Sep 2001	Dec 2001	The unit was taken off-line and shut down for 71 days for Cycle XXIV-XXV refueling outage.

LA SALLE COUNTY
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**LA SALLE COUNTY 1**	Nameplate Rating (MWe):	**1146**
Location:	**La Salle County, Illinois**	MDC Net (MWe):	**1111**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**66.8**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**59.7**
Construction Permit:	**9/10/1973**	Cumul. Forced Outage Rate:	**11.2**
Operating License Date:	**8/13/1982**	2-Year Avg. Cap. Factor (MDC Net):	**100.4**
Commercial Oper. Date:	**1/1/1984**	License Expiration Date:	**5/17/2022**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2001		An accumulation of bird excrement on an insulator caused a phase-to-ground fault on the 'C' phase of a 345 KV power line. The bushing/insulator failures on the 'C' phase caused the 1 West Main Power transformer to de-energize and resulted in a generator load reject and subsequent reactor scram. A circulating water pump tripped during the scram recovery.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**LA SALLE COUNTY 2**	Nameplate Rating (MWe):	**1146**
Location:	**La Salle County, Illinois**	MDC Net (MWe):	**1111**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**65.6**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**59.3**
Construction Permit:	**9/10/1973**	Cumul. Forced Outage Rate:	**16.8**
Operating License Date:	**3/23/1984**	2-Year Avg. Cap. Factor (MDC Net):	**96**
Commercial Oper. Date:	**10/19/1984**	License Expiration Date:	**12/26/2023**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Nov 2000	Dec 2000	The turbine tripped on reactor high water level causing a reactor scram. Following the scram, the plant entered a refueling outage that lasted 21 days. During the plant startup following the outage, the reactor scrammed from 33% power.
Sep 2001		The operators performed a manual scram due to the loss of feedwater control caused by a failed fuse in a bus undervoltage relay that caused a feedwater heater isolation when the heater lineup could not pass adequate condensate flow to maintain heater level control. The subsequent investigation and repairs took nearly six days. During power ascension following the outage, an improper feedwater heater drain lineup required a manual scram from 75% power when several feedwater heater isolations occurred.

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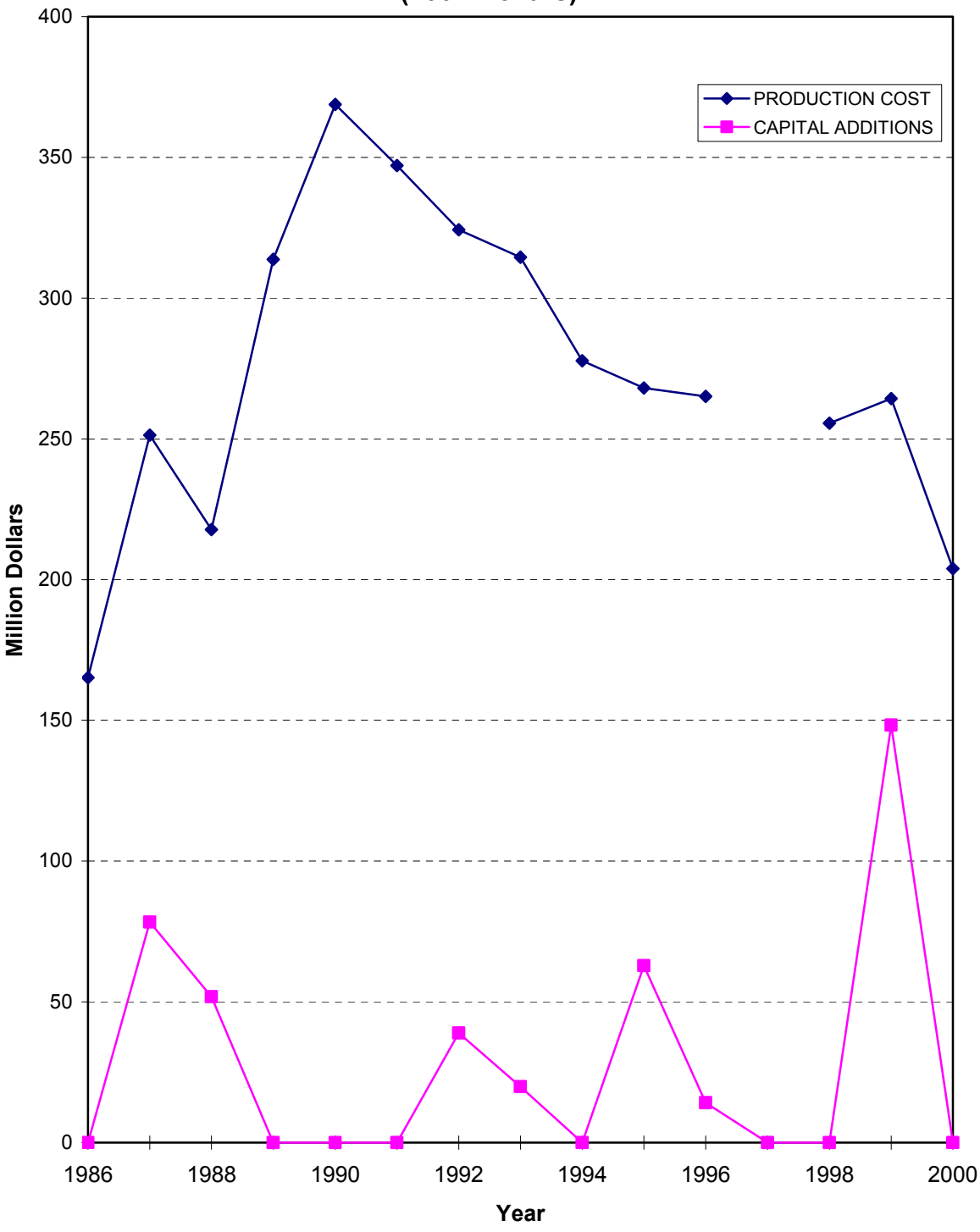
LIMERICK
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**LIMERICK 1**	Nameplate Rating (MWe):	**1160**
Location:	**Montgomery County, Pennsylvania**	MDC Net (MWe):	**1143**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**85.8**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**76.8**
Construction Permit:	**6/19/1974**	Cumul. Forced Outage Rate:	**3.5**
Operating License Date:	**8/8/1985**	2-Year Avg. Cap. Factor (MDC Net):	**95.4**
Commercial Oper. Date:	**2/1/1986**	License Expiration Date:	**10/26/2024**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	Apr 2000	The unit was taken off-line and shut down for 30 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**LIMERICK 2**	Nameplate Rating (MWe):	**1162**
Location:	**Montgomery County, Pennsylvania**	MDC Net (MWe):	**1143**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**91.2**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**84.6**
Construction Permit:	**6/19/1974**	Cumul. Forced Outage Rate:	**2.9**
Operating License Date:	**8/25/1989**	2-Year Avg. Cap. Factor (MDC Net):	**95.6**
Commercial Oper. Date:	**1/8/1990**	License Expiration Date:	**6/22/2029**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2001		The reactor was manually scrammed from 85% power because of a stuck-open safety/relief valve.
Apr 2001		The main generator was tripped due to high vibration. Following the subsequent shut down, the plant entered Refuel Outage 2R06. The outage lasted for 16.5 days.

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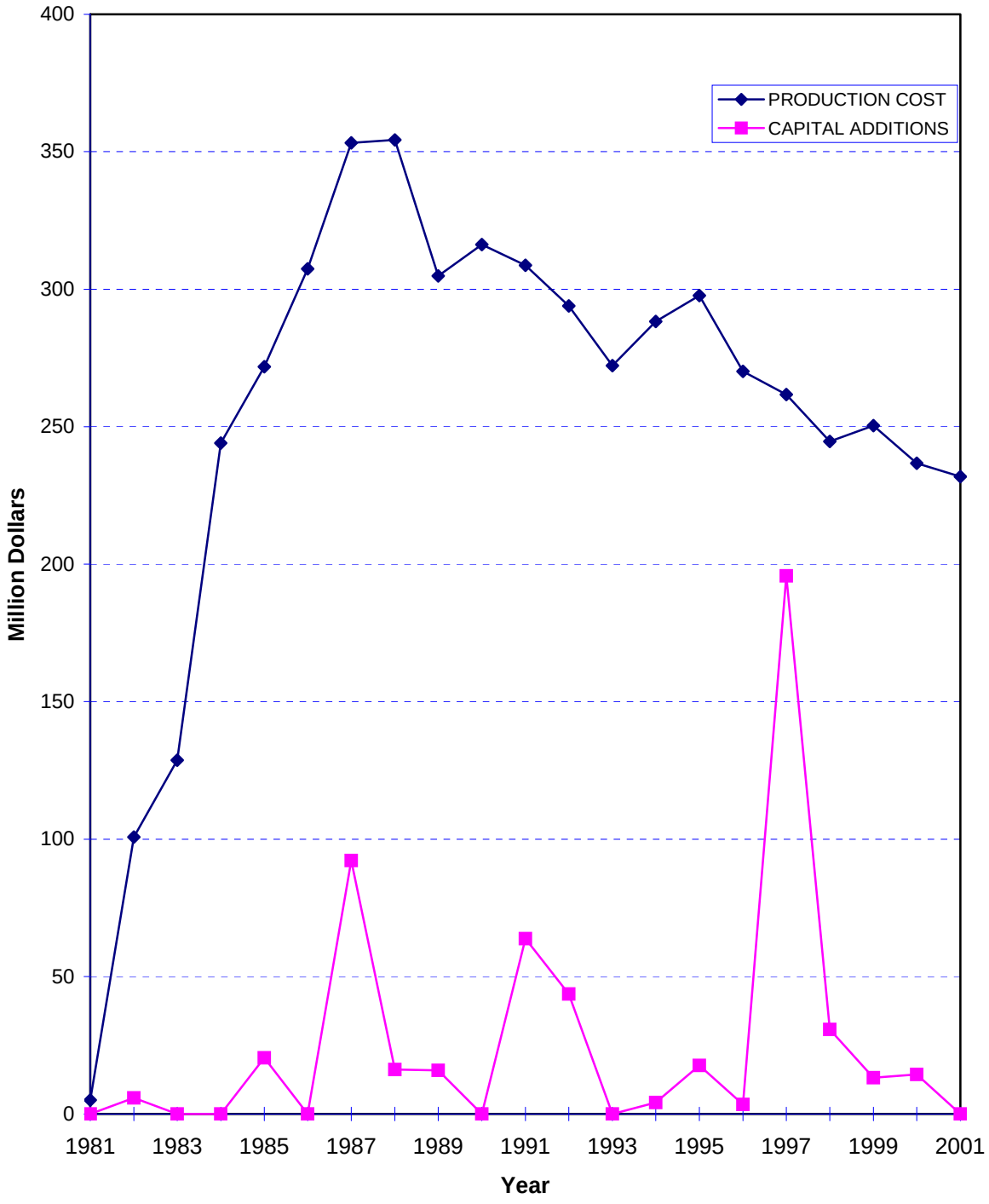
McGUIRE
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**MCGUIRE 1**	Nameplate Rating (MWe):	**1305**
Location:	**Mecklenburg County, North Carolina**	MDC Net (MWe):	**1100**
Operator:	**Duke Power**	Cumul. Avail. Factor:	**75.9**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**73.2**
Construction Permit:	**2/23/1973**	Cumul. Forced Outage Rate:	**9.8**
Operating License Date:	**7/8/1981**	2-Year Avg. Cap. Factor (MDC Net):	**96.8**
Commercial Oper. Date:	**12/1/1981**	License Expiration Date:	**6/21/2021**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2001		The plant had an almost six day forced outage to repair a pressurizer code safety valve leak.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for 38 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**MCGUIRE 2**	Nameplate Rating (MWe):	**1305**
Location:	**Mecklenburg County, North Carolina**	MDC Net (MWe):	**1100**
Operator:	**Duke Power**	Cumul. Avail. Factor:	**81.0**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**81.1**
Construction Permit:	**2/23/1973**	Cumul. Forced Outage Rate:	**5.7**
Operating License Date:	**5/27/1983**	2-Year Avg. Cap. Factor (MDC Net):	**95**
Commercial Oper. Date:	**3/1/1984**	License Expiration Date:	**3/3/2023**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 41 days for a refueling outage.

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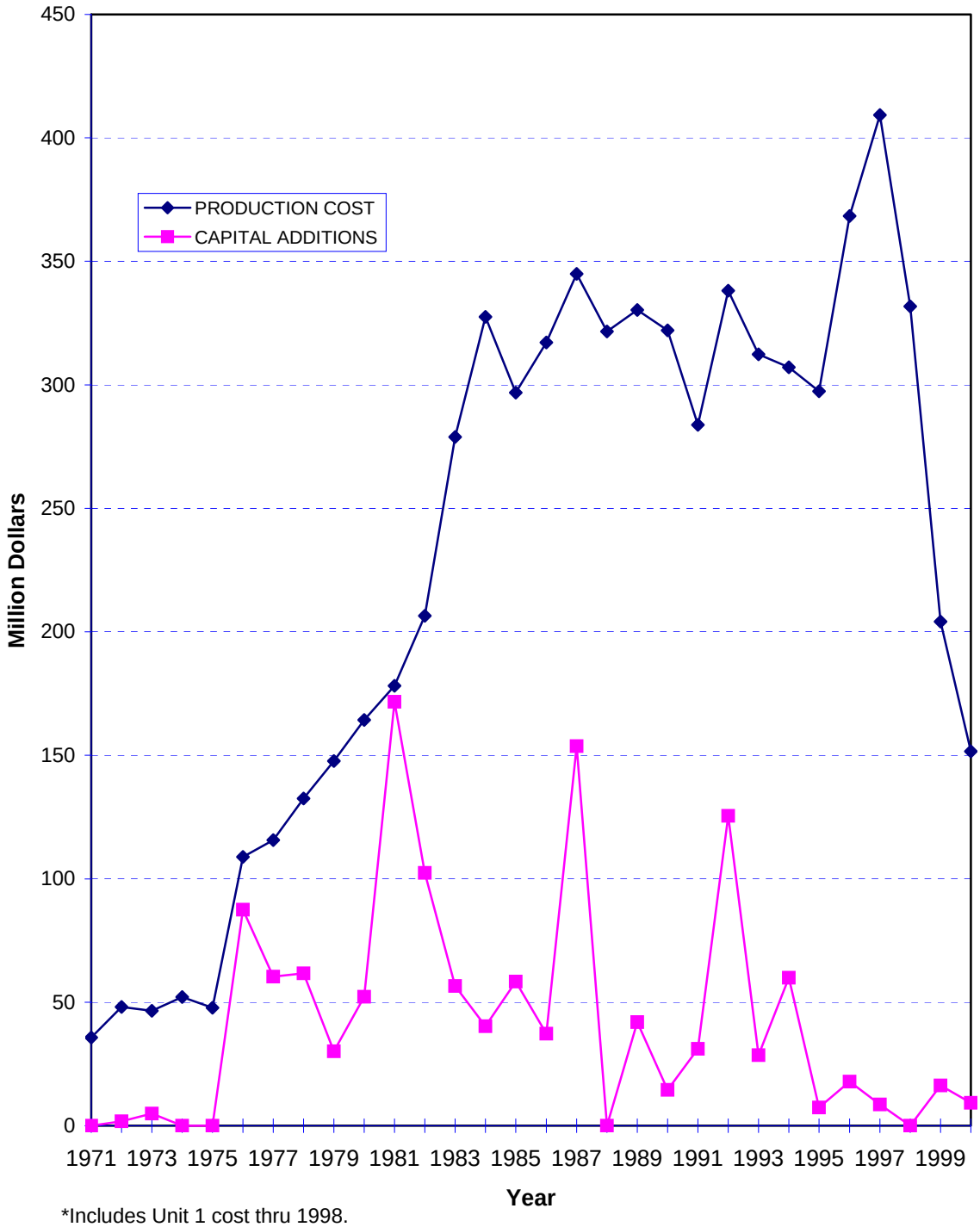
MILLSTONE
(Units 1 & 2*)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



*Includes Unit 1 cost thru 1998.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

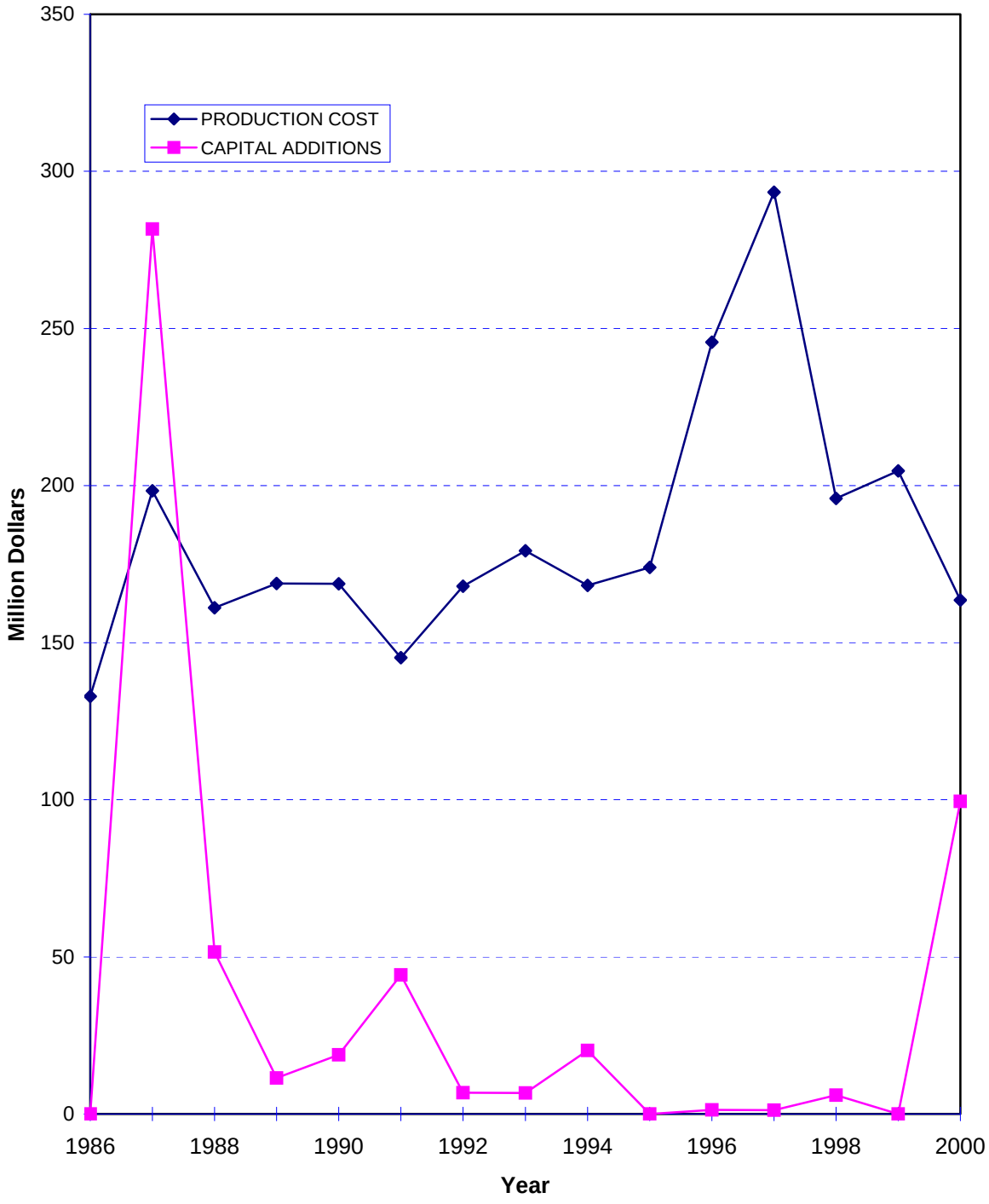
Unit:	**MILLSTONE POINT 2**	Nameplate Rating (MWe):	**909**
Location:	**New London County, Connecticut**	MDC Net (MWe):	**869**
Operator:	**Dominion Nuclear Connecticut, Inc.**	Cumul. Avail. Factor:	**60.7**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**56.8**
Construction Permit:	**12/11/1970**	Cumul. Forced Outage Rate:	**26.3**
Operating License Date:	**9/30/1975**	2-Year Avg. Cap. Factor (MDC Net):	**88.6**
Commercial Oper. Date:	**12/26/1975**	License Expiration Date:	**7/31/2015**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		During surveillance testing, a control element assembly (CEA), 7-65, dropped to 0 steps. During the downpower to recover the dropped CEA, CEA 3-63 dropped to 0 steps. Operators then manually tripped the reactor as required by plant procedures. The plant then began a 16 day forced outage to investigate the problem and, as necessary, make repairs.
Apr 2000	Jun 2000	The unit was taken off-line and shut down for 40 days for a refueling outage.
Apr 2001	May 2001	The unit was taken off-line and shut down for a forced outage lasting seven days when the unit experienced an automatic reactor trip due to a main turbine trip. The turbine trip was caused by high condenser backpressure, which, in turn, was caused by tripping of the "C" circulating water pump during maintenance restoration of the "D" circulating water pump. The unit had been separated from the grid to repair a leaking feedwater heater relief valve. At the end of the outage, a manual reactor trip was initiated by operators due to "B" circulating water pump trip while the "A" circulating water pump was already out for maintenance.

MILLSTONE 3

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

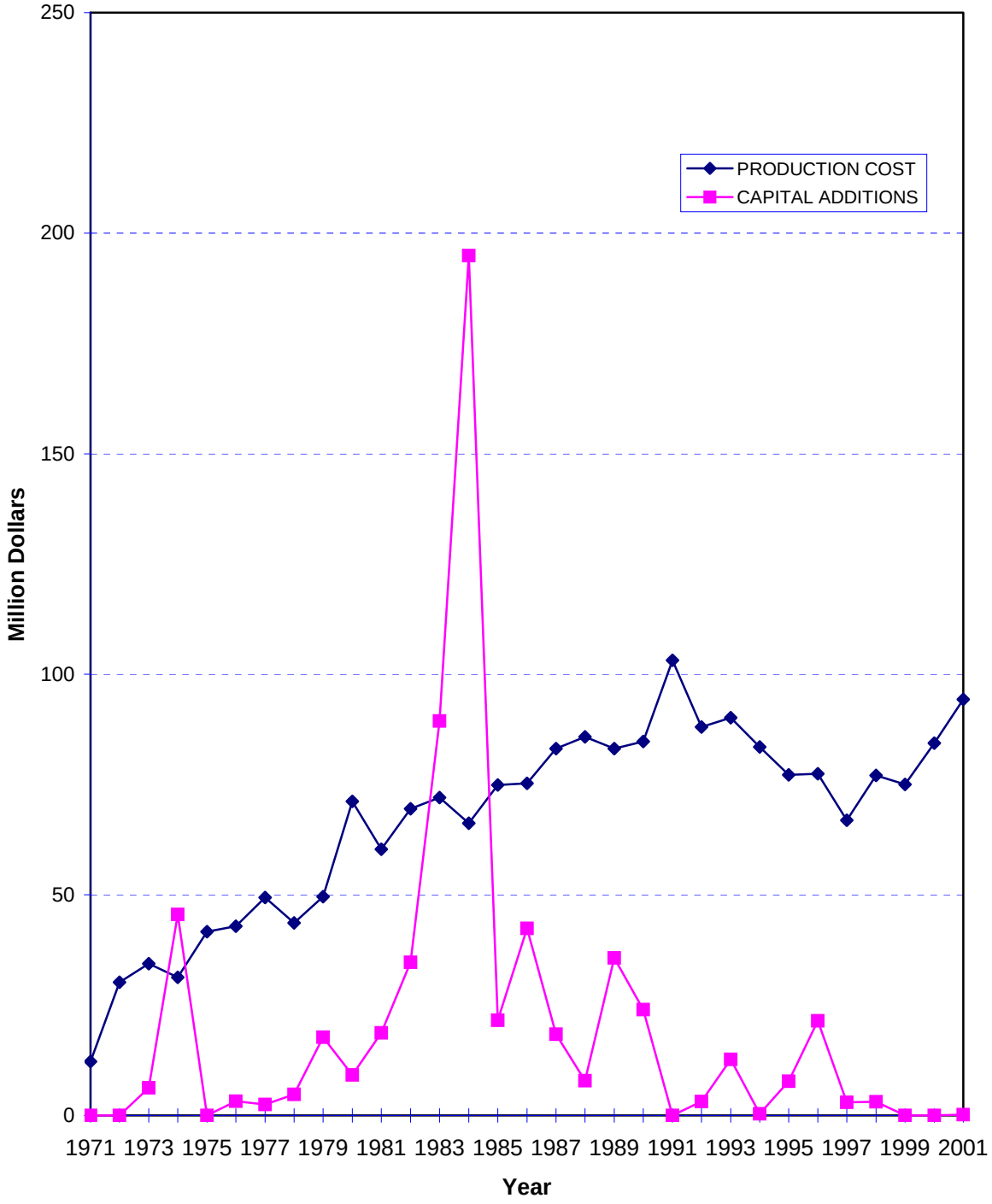
Unit:	**MILLSTONE POINT 3**	Nameplate Rating (MWe):	**1253**
Location:	**New London County**	MDC Net (MWe):	**1136**
Operator:	**Dominion Nuclear Connecticut, Inc.**	Cumul. Avail. Factor:	**67.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**64.7**
Construction Permit:	**8/9/1974**	Cumul. Forced Outage Rate:	**25.1**
Operating License Date:	**1/31/1986**	2-Year Avg. Cap. Factor (MDC Net):	**91**
Commercial Oper. Date:	**4/23/1986**	License Expiration Date:	**11/25/2025**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2001	Apr 2001	The unit was taken off-line and shut down for 56 days for a refueling outage.

MONTICELLO

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

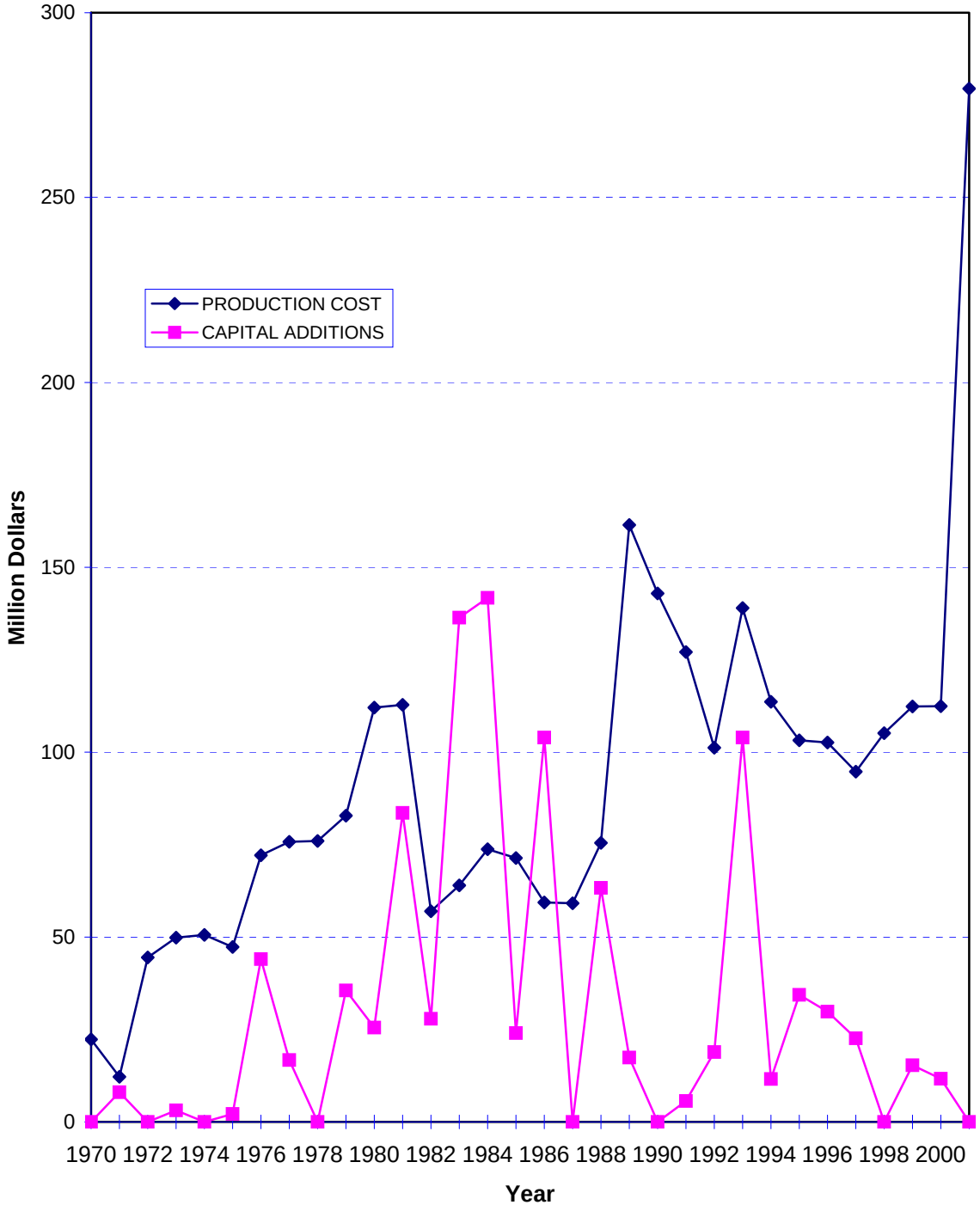
Unit:	**MONTICELLO**	Nameplate Rating (MWe):	**577**
Location:	**Wright County, Minnesota**	MDC Net (MWe):	**578**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**81.1**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**71.9**
Construction Permit:	**6/19/1967**	Cumul. Forced Outage Rate:	**4.6**
Operating License Date:	**1/9/1981**	2-Year Avg. Cap. Factor (MDC Net):	**80**
Commercial Oper. Date:	**6/30/1971**	License Expiration Date:	**9/8/2010**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000	Mar 2000	The unit was taken off-line and shut down for 55 days for a refueling outage.
Aug 2000	Sep 2000	High temperatures on the 345 KV high side disconnect bolted connections forced shutdown for repair. The forced shutdown for repairs lasted almost six days.
Feb 2001	Apr 2001	The plant was shut down in a forced outage for 38 days to respond to questions regarding Section XI compliance of the testable check valves for the high pressure coolant injection and low pressure coolant injection systems.
Nov 2001	Dec 2001	The unit was taken off-line and shut down for 42 days for a refueling outage.

NINE MILE POINT 1*

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



*Includes Nine Mile Point 2 cost starting 2001.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

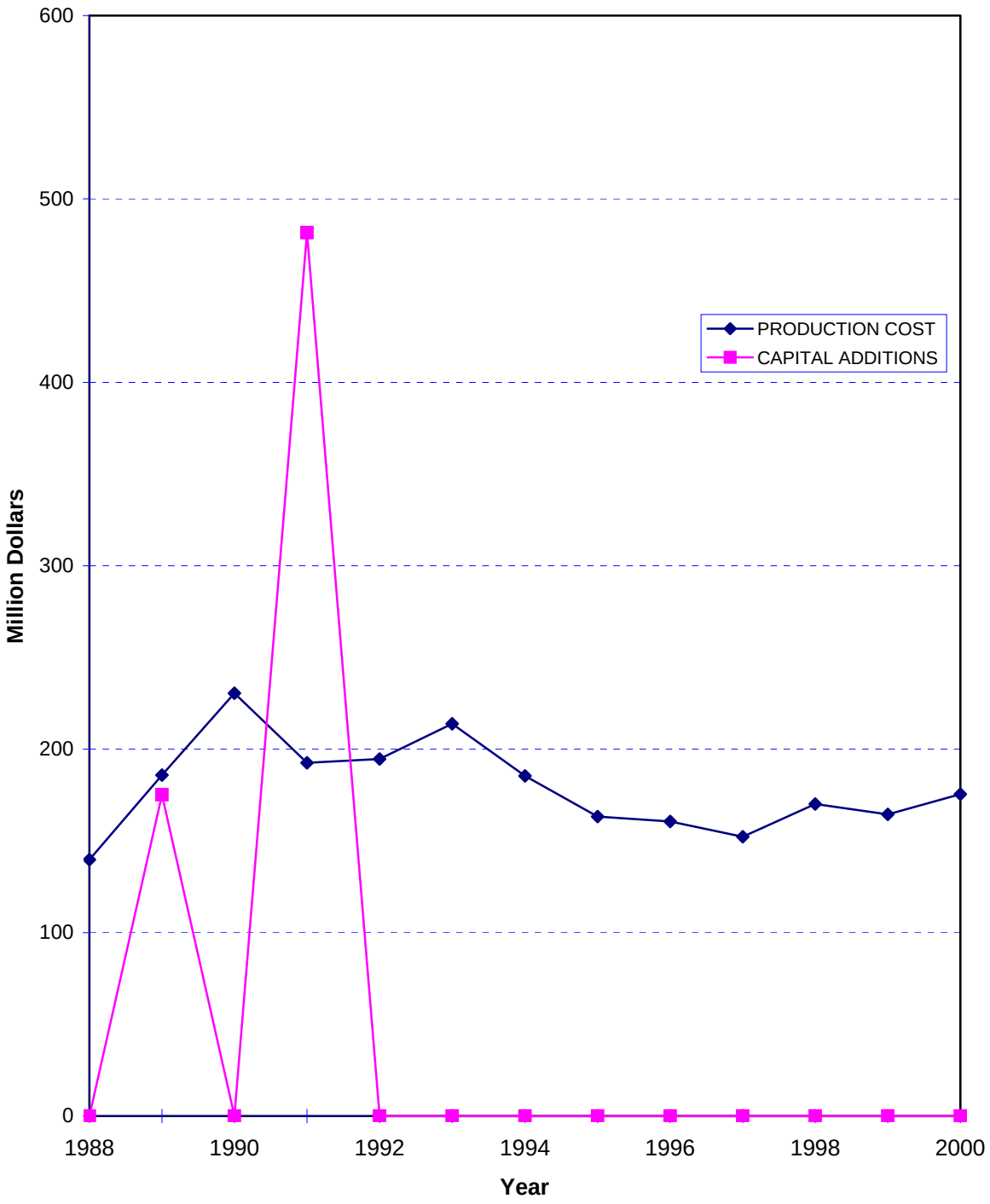
Unit:	**NINE MILE POINT 1**	Nameplate Rating (MWe):	**642**
Location:	**Oswego County, New York**	MDC Net (MWe):	**565**
Operator:	**Constellation Nuclear**	Cumul. Avail. Factor:	**68.1**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**66.9**
Construction Permit:	**4/12/1965**	Cumul. Forced Outage Rate:	**20.7**
Operating License Date:	**12/26/1974**	2-Year Avg. Cap. Factor (MDC Net):	**91.4**
Commercial Oper. Date:	**12/1/1969**	License Expiration Date:	**8/22/2009**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000	Mar 2000	The trip of reactor recirculation pump #15 forced a shutdown for pump repairs for nearly five days.
Apr 2000	May 2000	The unit was removed from service for a scheduled outage of nine days in order to inject noble metals into the primary system and repair the main turbine controls.
Sep 2000	Oct 2000	The unit was removed from service for about nine days for scheduled maintenance outage. The plant experienced a manual scram during startup from the outage due to a stuck open electromatic relief valve caused by a bent pilot valve stem and a failed vacuum breaker in the relief valve discharge line. The licensee declared an unusual event and an outage extension of seven days was required to complete repairs.
Mar 2001	May 2001	The unit was taken off line and shut down for 51 days for a refueling outage. The turbine/generator was removed from service because of bearing vibrations.
Aug 2001		A grid perturbation coupled with a failed negative sequence current relay generation protection logic caused a turbine trip and reactor scram with a subsequent forced outage for more than six days to affect repairs.

NINE MILE POINT 2*

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



*Starting in 2001, Nine Mile Point 2 costs are combined with Nine Mile Point 1 costs.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**NINE MILE POINT 2**	Nameplate Rating (MWe):	**1259**
Location:	**Oswego County, New York**	MDC Net (MWe):	**1120**
Operator:	**Constellation Nuclear**	Cumul. Avail. Factor:	**76.7**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**71.2**
Construction Permit:	**6/24/1974**	Cumul. Forced Outage Rate:	**9.9**
Operating License Date:	**7/2/1987**	2-Year Avg. Cap. Factor (MDC Net):	**85.7**
Commercial Oper. Date:	**3/11/1988**	License Expiration Date:	**10/31/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	Apr 2000	The unit was taken off-line and shut down for 48 days for a refueling outage. The reactor was manually scrammed during the shutdown because seal water flow to the operating feedwater pump was lost. Also, reactor core isolation cooling failed to start during the scram recovery.
Sep 2000		The plant had a maintenance outage that lasted 11 days for a planned noble metal addition. During the startup following the outage, the main turbine tripped on high vibration. The reactor subsequently scrammed from 70% power. The turbine lubricating oil system was placed in service when the temperature of the oil was too low and resulted in oil whip/whirl. Oil whip/whirl is when the wedge of oil between the turbine shaft and bearing sleeves moves and causes eccentric shaft rotation, resulting in turbine vibration.
Oct 2000	Nov 2000	Forced maintenance outage that lasted seven days to investigate why the hydraulic flow control valve failed, replace the servo, and replace the resistance variable differential transformer.
May 2001		Scheduled maintenance outage lasting six days to repair the failed position feedback mechanism on the "A" reactor recirculation flow control valve. Also, the resistance variable differential transformer flex coupling was replaced.

NINE MILE POINT 2 – (Continued)

Jul 2001	Scheduled maintenance outage lasting eight days to repair the failed position feedback mechanism on the "B" reactor recirculation flow control valve. Also, installed modified position indication feedback mechanisms and backup position feedback mechanisms for both "A" and "B" reactor recirculation flow control valves.
Dec 2001	Forced maintenance outage for four days to investigate feedpump "A" motor winding failure. "B" and "C" feedpump motor windings were also inspected. The "A" motor was sent to the vendor for rewinding.

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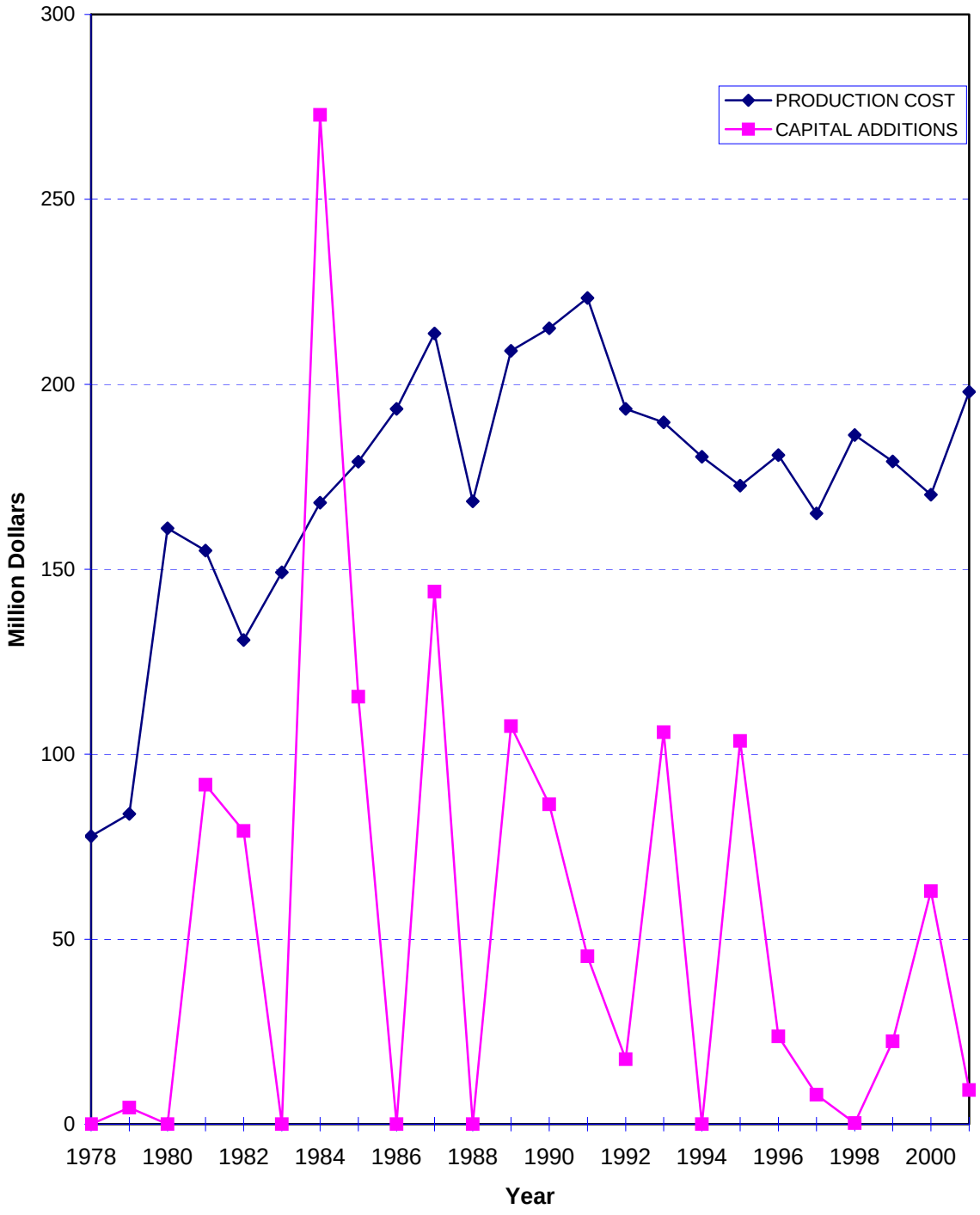
NORTH ANNA
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**NORTH ANNA 1**	Nameplate Rating (MWe):	**994**
Location:	**Louisa County, Virginia**	MDC Net (MWe):	**925**
Operator:	**Dominion Generation**	Cumul. Avail. Factor:	**79.0**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**72.8**
Construction Permit:	**2/19/1971**	Cumul. Forced Outage Rate:	**6.9**
Operating License Date:	**4/1/1978**	2-Year Avg. Cap. Factor (MDC Net):	**90**
Commercial Oper. Date:	**6/6/1978**	License Expiration Date:	**4/1/2018**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	Apr 2000	The unit was taken off-line and shut down for 28 days for a refueling outage.
May 2000		The plant had a forced outage for five days when the unit experienced an automatic reactor trip due to generator output breaker failure. The generator output breaker was replaced, tested and returned to service.
Sep 2001	Oct 2001	The unit was taken off-line and shut down for 31 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**NORTH ANNA 2**	Nameplate Rating (MWe):	**979**
Location:	**Louisa County, Virginia**	MDC Net (MWe):	**917**
Operator:	**Dominion Generation**	Cumul. Avail. Factor:	**84.6**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**79.7**
Construction Permit:	**2/19/1971**	Cumul. Forced Outage Rate:	**4.4**
Operating License Date:	**8/21/1980**	2-Year Avg. Cap. Factor (MDC Net):	**88.1**
Commercial Oper. Date:	**12/14/1980**	License Expiration Date:	**8/21/2020**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000		The plant was manually scrammed in response to the loss of the service transformer which had experienced an insulator failure. An emergency diesel generator failed to start during the event.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for 30 days for a refueling outage.
Oct 2001	Dec 2001	Scheduled outage for 48 days to inspect the reactor head.

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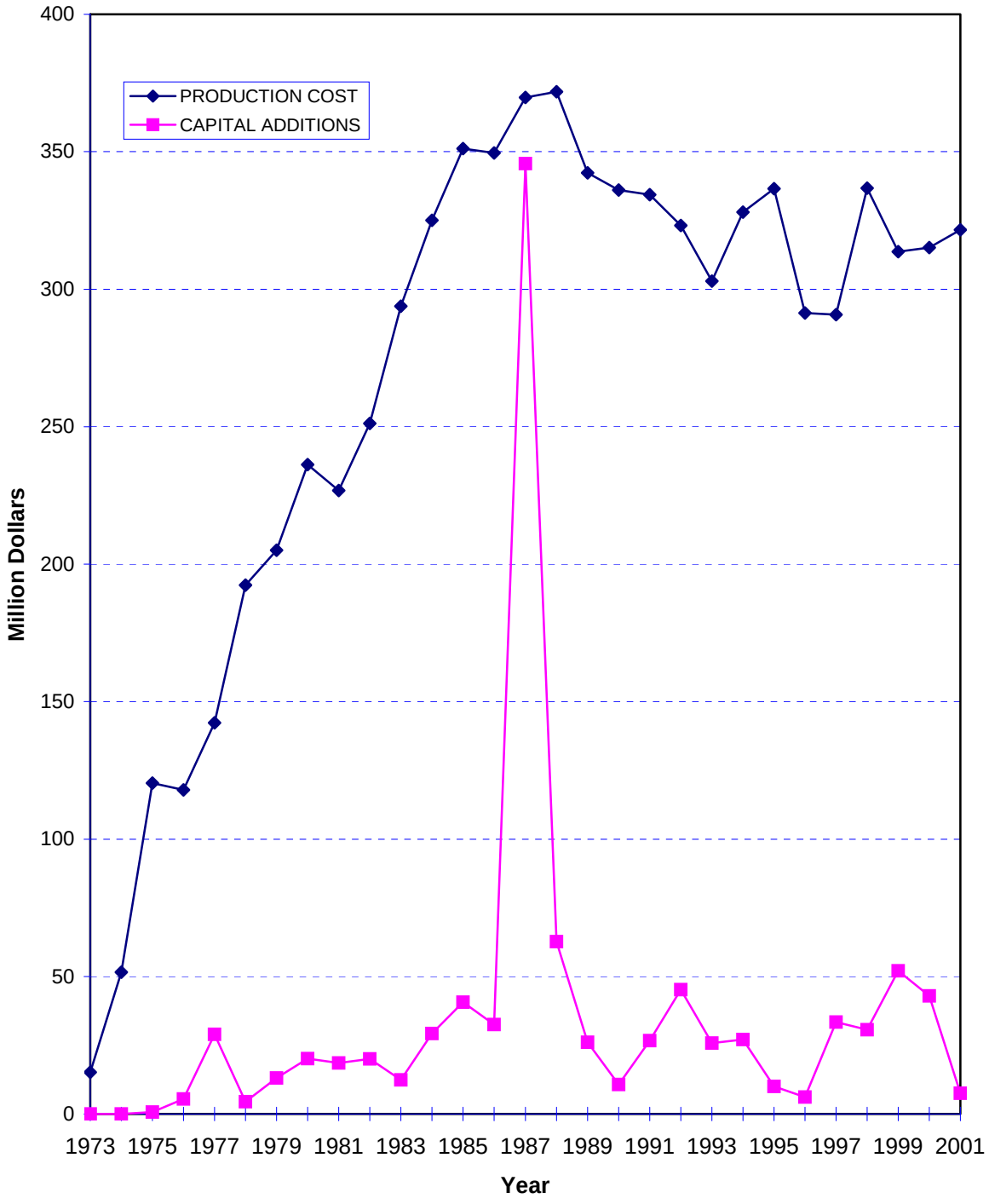
OCONEE
(Units 1, 2, and 3)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**OCONEE 1**	Nameplate Rating (MWe):	**934**
Location:	**Oconee County, South Carolina**	MDC Net (MWe):	**846**
Operator:	**Duke Power**	Cumul. Avail. Factor:	**77.1**
Type:	**Babcock and Wilcox PWR**	Cumul. Cap. Factor (MDC Net):	**74.0**
Construction Permit:	**11/6/1967**	Cumul. Forced Outage Rate:	**9.6**
Operating License Date:	**2/6/1973**	2-Year Avg. Cap. Factor (MDC Net):	**89.4**
Commercial Oper. Date:	**7/15/1973**	License Expiration Date:	**2/6/2033**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000	Mar 2000	The unit was taken off-line and shut down for 17 days to repair a reactor coolant system pressure boundary piping leak and to replace the reactor coolant pump seals on three reactor coolant pumps.
Nov 2000	Jan 2001	The unit was taken off-line and shut down for 55 days for the End-of-Cycle 19 refueling outage. Just prior to the outage, the turbine tripped from bearing high vibration. Also, visual inspection of the reactor pressure vessel head revealed cracks in several small bore penetrations. The reactor pressure vessel head thermocouples and control rod drive mechanisms were repaired.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**OCONEE 2**	Nameplate Rating (MWe):	**934**
Location:	**Oconee County, South Carolina**	MDC Net (MWe):	**846**
Operator:	**Duke Power**	Cumul. Avail. Factor:	**79.7**
Type:	**Babcock and Wilcox PWR**	Cumul. Cap. Factor (MDC Net):	**76.1**
Construction Permit:	**11/6/1967**	Cumul. Forced Outage Rate:	**8.9**
Operating License Date:	**10/6/1973**	2-Year Avg. Cap. Factor (MDC Net):	**95.6**
Commercial Oper. Date:	**9/9/1974**	License Expiration Date:	**10/6/2033**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2001	Jun 2001	The unit was taken off-line and shut down for 35.5 days for the End-of-Cycle 18 refueling and maintenance outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

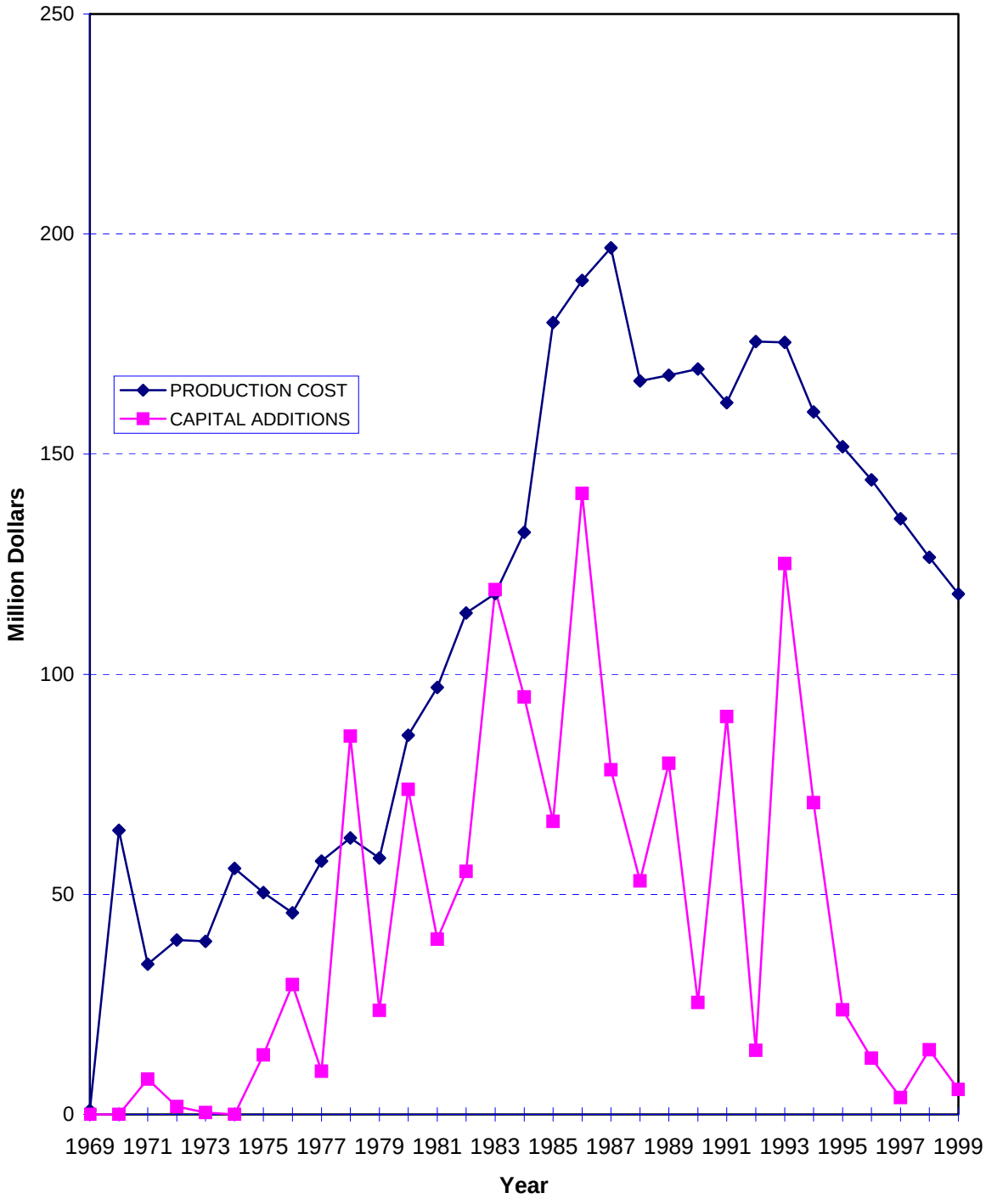
Unit:	**OCONEE 3**	Nameplate Rating (MWe):	**934**
Location:	**Oconee County, South Carolina**	MDC Net (MWe):	**846**
Operator:	**Duke Power**	Cumul. Avail. Factor:	**77.5**
Type:	**Babcock and Wilcox PWR**	Cumul. Cap. Factor (MDC Net):	**75.5**
Construction Permit:	**11/6/1967**	Cumul. Forced Outage Rate:	**9.5**
Operating License Date:	**7/19/1974**	2-Year Avg. Cap. Factor (MDC Net):	**80.6**
Commercial Oper. Date:	**12/16/1974**	License Expiration Date:	**7/19/2034**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	May 2000	The unit was taken off-line and shut down for 42 days for a refueling outage.
Feb 2001	Apr 2001	Forced outage lasting 66 days to repair leaks found on reactor vessel head control rod drive mechanism and to repair a leaking pressurizer code safety relief valve.
Nov 2001	Dec 2001	The unit was taken off-line and shut down for 34 days for a refueling outage.

OYSTER CREEK

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

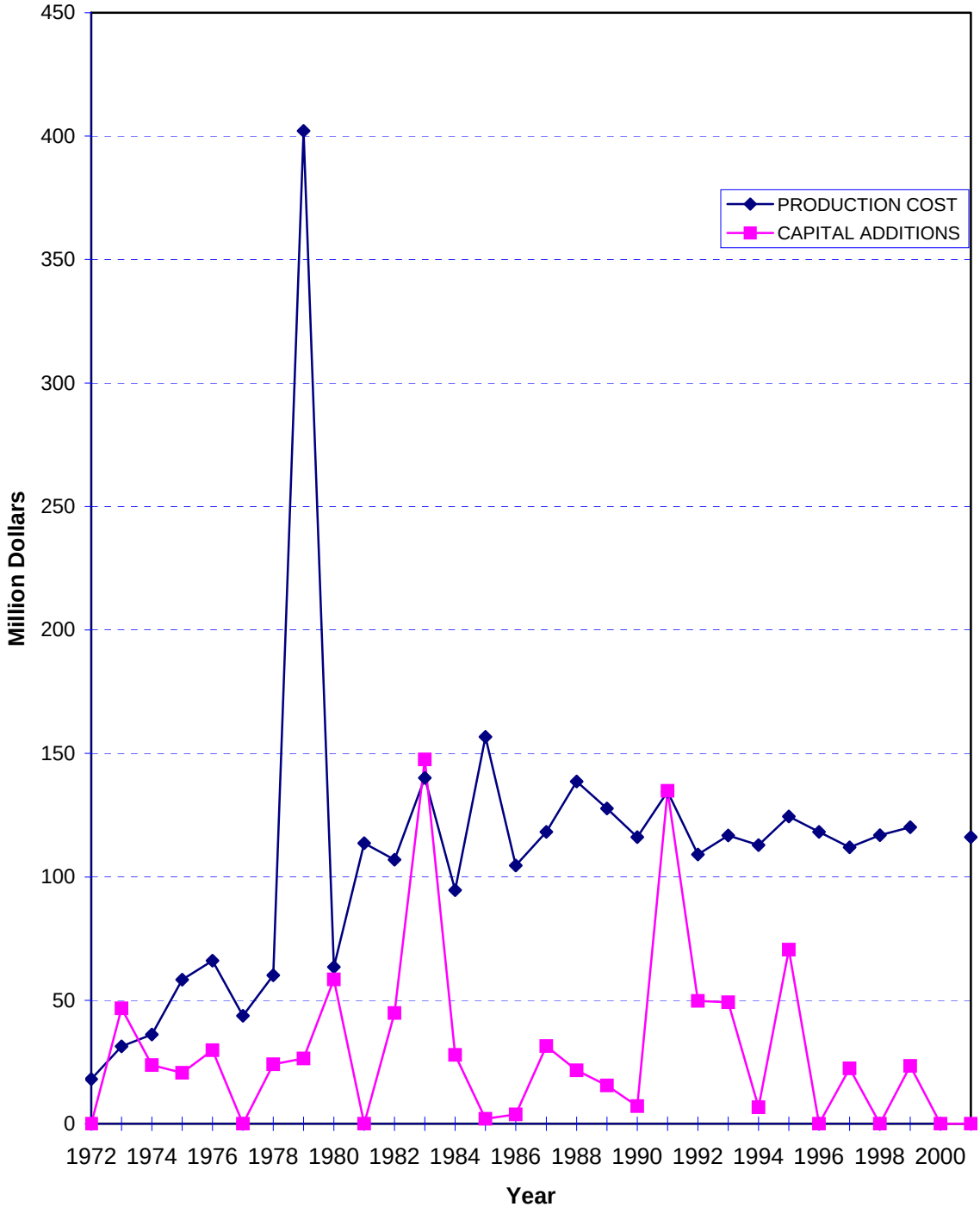
Unit:	**OYSTER CREEK**	Nameplate Rating (MWe):	**550**
Location:	**Ocean County, New Jersey**	MDC Net (MWe):	**619**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**70.8**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**64.5**
Construction Permit:	**12/15/1964**	Cumul. Forced Outage Rate:	**8.9**
Operating License Date:	**8/1/1969**	2-Year Avg. Cap. Factor (MDC Net):	**84.2**
Commercial Oper. Date:	**12/1/1969**	License Expiration Date:	**12/15/2009**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000	Feb 2000	The operators manually scrammed the reactor when the reactor recirculation pumps shutdown during an isolation condenser auto actuation test. Switches in one set were not reset during the surveillance before testing a second set of switches. The forced outage lasted 12 days.
Feb 2000	Mar 2000	The operators took the generator off-line to return the M1A main transformer to service. The reactor was in hot-standby during this evolution. A reactor scram occurred while switching from the start-up to the auxiliary transformers. The generator protective relay had not been reset, leaving a valid trip signal in the generator protection system. The outage, extended to perform maintenance, lasted 18 days.
Aug 2000		The facility had a plant technical specifications shutdown due to the loss of secondary containment integrity. The shutdown led to an almost six day forced outage to repair two ventilation system isolation valves.
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 35 days for a refueling outage. There was a reactor scram during the startup from the refueling outage due to low reactor water level caused by personnel error.
Aug 2001		Severe weather caused one 230 KV line and two 34.5 KV feed lines to be lost to the plant. The resulting electrical transients on the 230 KV distribution system caused several safety system actuations.
Nov 2001		The plant was shut down for almost eight days in a forced outage to repair a failed electrical cable to unit substation, 1B2. During the outage, the licensee reported a large (several hundred) fishkill of Jackfish in the discharge canal.

PALISADES

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

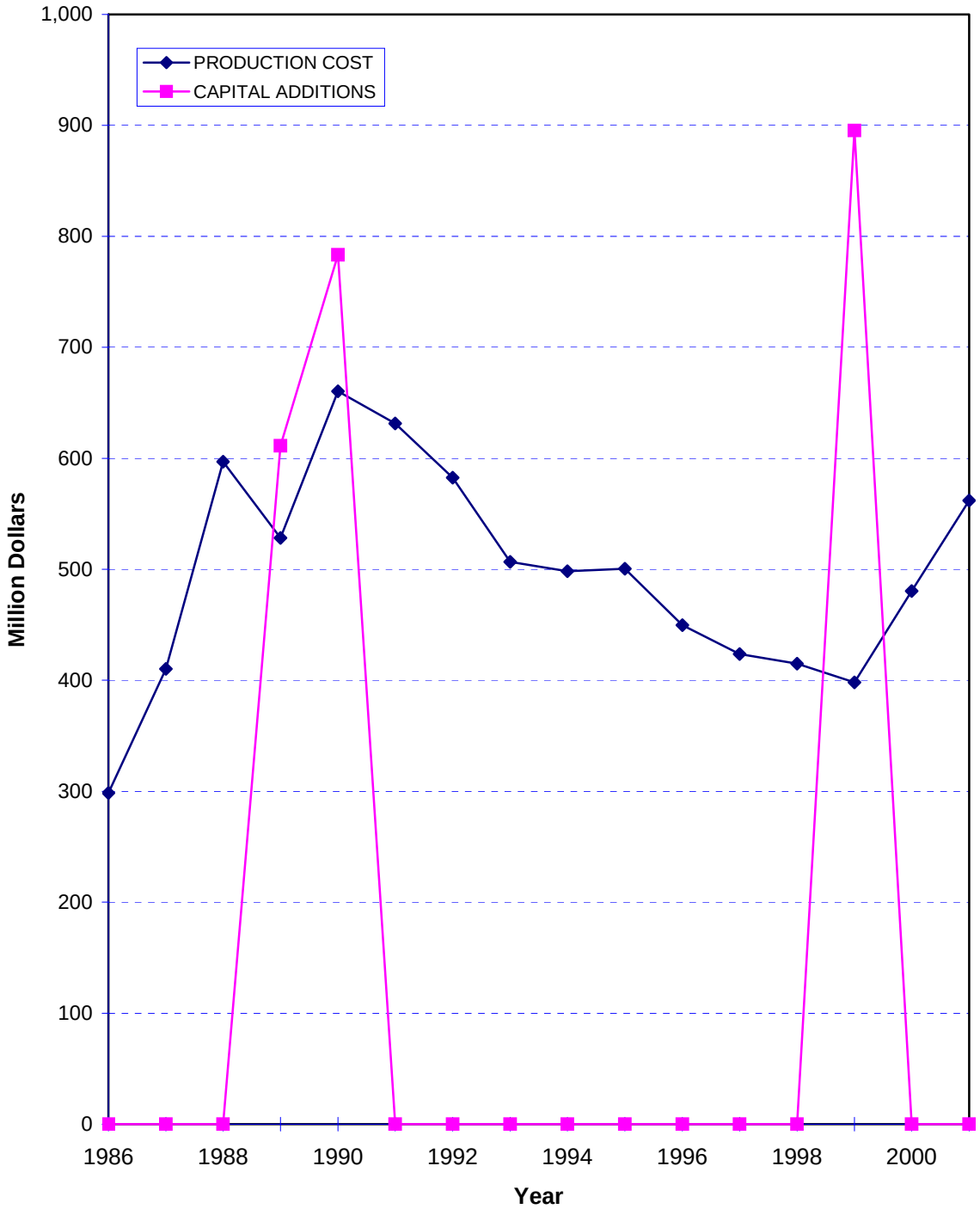
Unit:	**PALISADES**	Nameplate Rating (MWe):	**812**
Location:	**Van Buren County, Michigan**	MDC Net (MWe):	**730**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**59.2**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**55.0**
Construction Permit:	**3/14/1967**	Cumul. Forced Outage Rate:	**26.0**
Operating License Date:	**10/16/1972**	2-Year Avg. Cap. Factor (MDC Net):	**63.2**
Commercial Oper. Date:	**12/31/1971**	License Expiration Date:	**3/14/2007**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The plant was shut down for a 24 day forced outage to restore chemistry control, which was lost due to high sodium levels in the steam generators.
Jul 2000		A control rod drive mechanism malfunction, caused a primary coolant leak and required a nearly eight day forced outage to correct.
Sep 2000		The "A" train safety injection pumps mini-flow recirculation check valve had internals problems. The condition was an original plant construction fault and required an 11 day forced outage to fix.
Mar 2001	May 2001	The unit was taken off-line and shut down for 41 days for the Cycle 15 refueling outage.
Jun 2001	Jan 2002	Primary coolant system leakage required more than six months (195 days) to fix in a forced outage.
Jun 2001		The NRC proposed a $55,000 fine for a Severity Level III violation based on the licensee's failure to provide complete and accurate information in letters to the NRC requesting enforcement discretion and exigent Technical Specification change.

PALO VERDE
(Units 1, 2, and 3)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**PALO VERDE 1**	Nameplate Rating (MWe):	**1403**
Location:	**Maricopa County, Arizona**	MDC Net (MWe):	**1243**
Operator:	**Arizona Public Service Company**	Cumul. Avail. Factor:	**75.1**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**72.6**
Construction Permit:	**5/25/1976**	Cumul. Forced Outage Rate:	**7.4**
Operating License Date:	**6/1/1985**	2-Year Avg. Cap. Factor (MDC Net):	**94.1**
Commercial Oper. Date:	**1/28/1986**	License Expiration Date:	**12/31/2024**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2001	May 2001	The unit was taken off-line and shut down for 44 days for the ninth refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**PALO VERDE 2**	Nameplate Rating (MWe):	**1403**
Location:	**Maricopa County, Arizona**	MDC Net (MWe):	**1243**
Operator:	**Arizona Public Service Company**	Cumul. Avail. Factor:	**78.1**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**76.2**
Construction Permit:	**5/25/1976**	Cumul. Forced Outage Rate:	**3.8**
Operating License Date:	**4/24/1986**	2-Year Avg. Cap. Factor (MDC Net):	**89.9**
Commercial Oper. Date:	**9/19/1986**	License Expiration Date:	**12/9/2025**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 33 days for a refueling outage. A pressurizer heater sleeve was also repaired during the outage.
Oct 2001	Nov 2001	Control element assembly inspections in Unit 3 indicated that cracks were present. The Unit 2 reactor was shut down to comply with LCO 3.0.3 of the plant technical specifications. The plant remained in the outage for almost 30 days.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

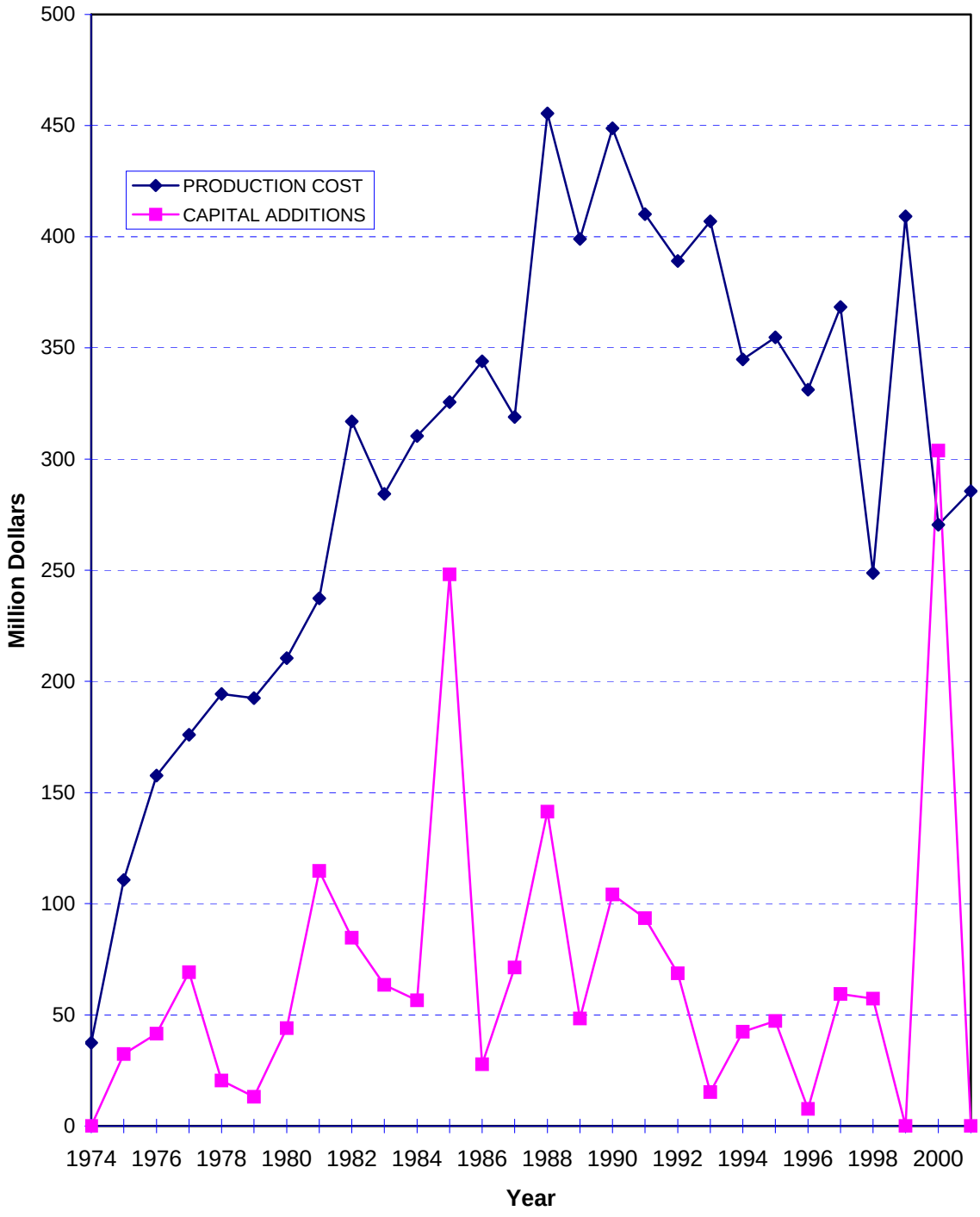
Unit:	**PALO VERDE 3**	Nameplate Rating (MWe):	**1403**
Location:	**Maricopa County, Arizona**	MDC Net (MWe):	**1247**
Operator:	**Arizona Public Service Company**	Cumul. Avail. Factor:	**81.9**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**80.1**
Construction Permit:	**5/25/1976**	Cumul. Forced Outage Rate:	**3.2**
Operating License Date:	**11/25/1987**	2-Year Avg. Cap. Factor (MDC Net):	**87.1**
Commercial Oper. Date:	**1/8/1988**	License Expiration Date:	**3/25/2027**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	May 2000	The unit was taken off-line and shut down for 31.5 days for a refueling outage.
Sep 2000	Oct 2000	The reactor was manually tripped and the plant shut down to repair a steam leak on a sample line inside containment. The outage lasted five days.
Feb 2001	Mar 2001	The plant entered a planned maintenance outage to replace a reactor coolant pump shaft. Vibration trend analysis had indicated a potential shaft flaw. The outage lasted 12 days.
Sep 2001	Nov 2001	The unit was taken off-line and shut down for 37 days for a refueling outage.

PEACH BOTTOM
(Units 2 and 3)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**PEACH BOTTOM 2**	Nameplate Rating (MWe):	**1221**
Location:	**York & Lancaster County, Pennsylvania**	MDC Net (MWe):	**1093**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**70.0**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**62.7**
Construction Permit:	**1/31/1968**	Cumul. Forced Outage Rate:	**9.2**
Operating License Date:	**12/14/1973**	2-Year Avg. Cap. Factor (MDC Net):	**93.4**
Commercial Oper. Date:	**7/5/1974**	License Expiration Date:	**8/8/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 20 days for a refueling outage. Just prior to the outage, operators manually scrammed the reactor after entering a restricted area of the power-to-flow map during turbine testing. Inadequate tag-out coordination caused a reactor recirculation pump trip that placed the plant in the restricted area.
Jun 2001		An electrical fault in the offsite power system caused two emergency 4 KV busses on each unit to transfer to their respective alternate power sources. As a result, several primary containment isolation valves actuated.
Oct 2001		The main generator A-phase isophase ventilation damper broke loose and fell onto the live-conductor of the generator. This caused a reactor scram and required a nearly six day outage to repair.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**PEACH BOTTOM 3**	Nameplate Rating (MWe):	**1221**
Location:	**York & Lancaster County, Pennsylvania**	MDC Net (MWe):	**1093**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**70.7**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**62.7**
Construction Permit:	**1/31/1968**	Cumul. Forced Outage Rate:	**9.2**
Operating License Date:	**7/2/1974**	2-Year Avg. Cap. Factor (MDC Net):	**94.2**
Commercial Oper. Date:	**12/23/1974**	License Expiration Date:	**7/2/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2001	Oct 2001	The unit was taken off-line and shut down for 25 days for refueling outage 3R13.

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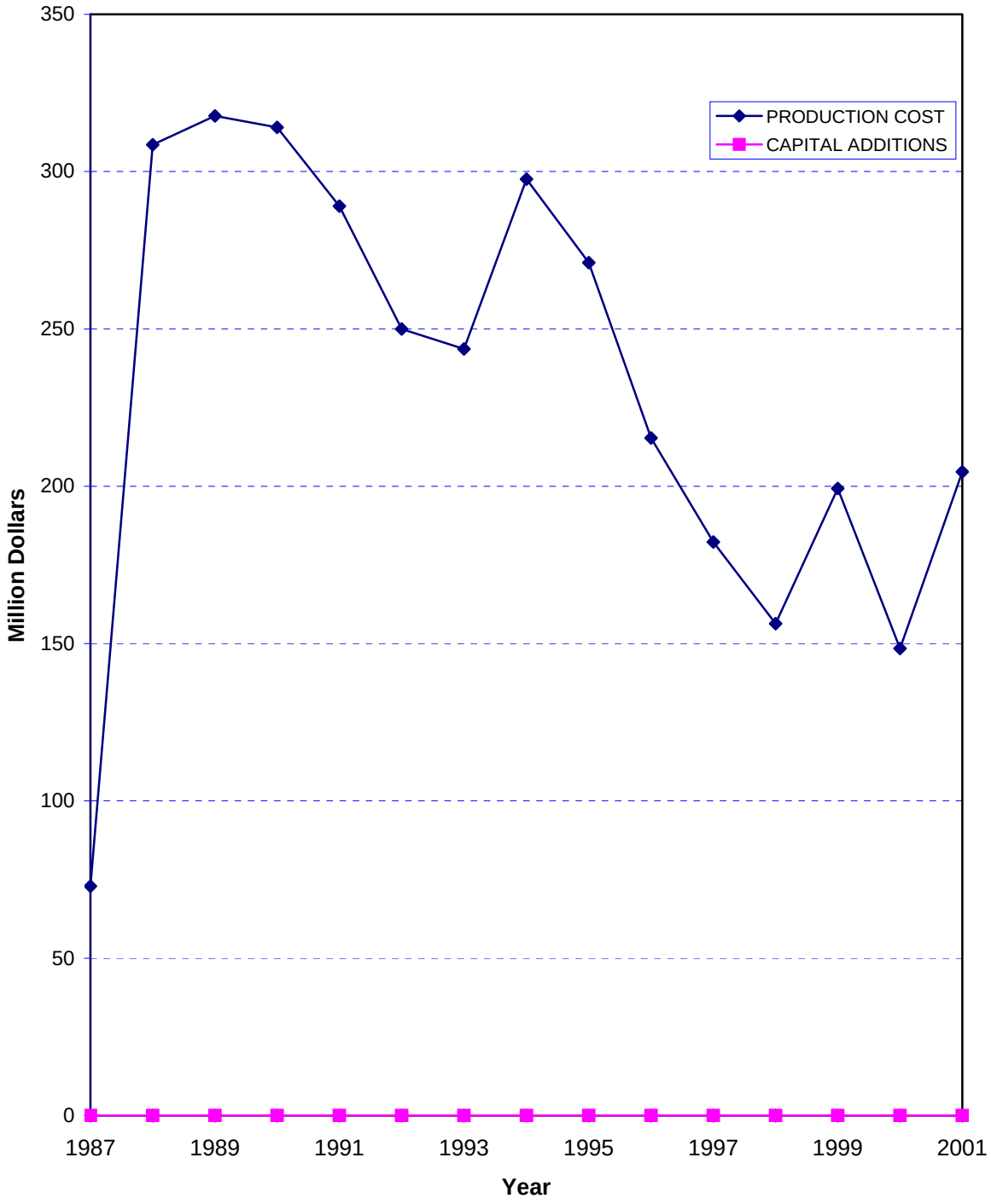
PERRY 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

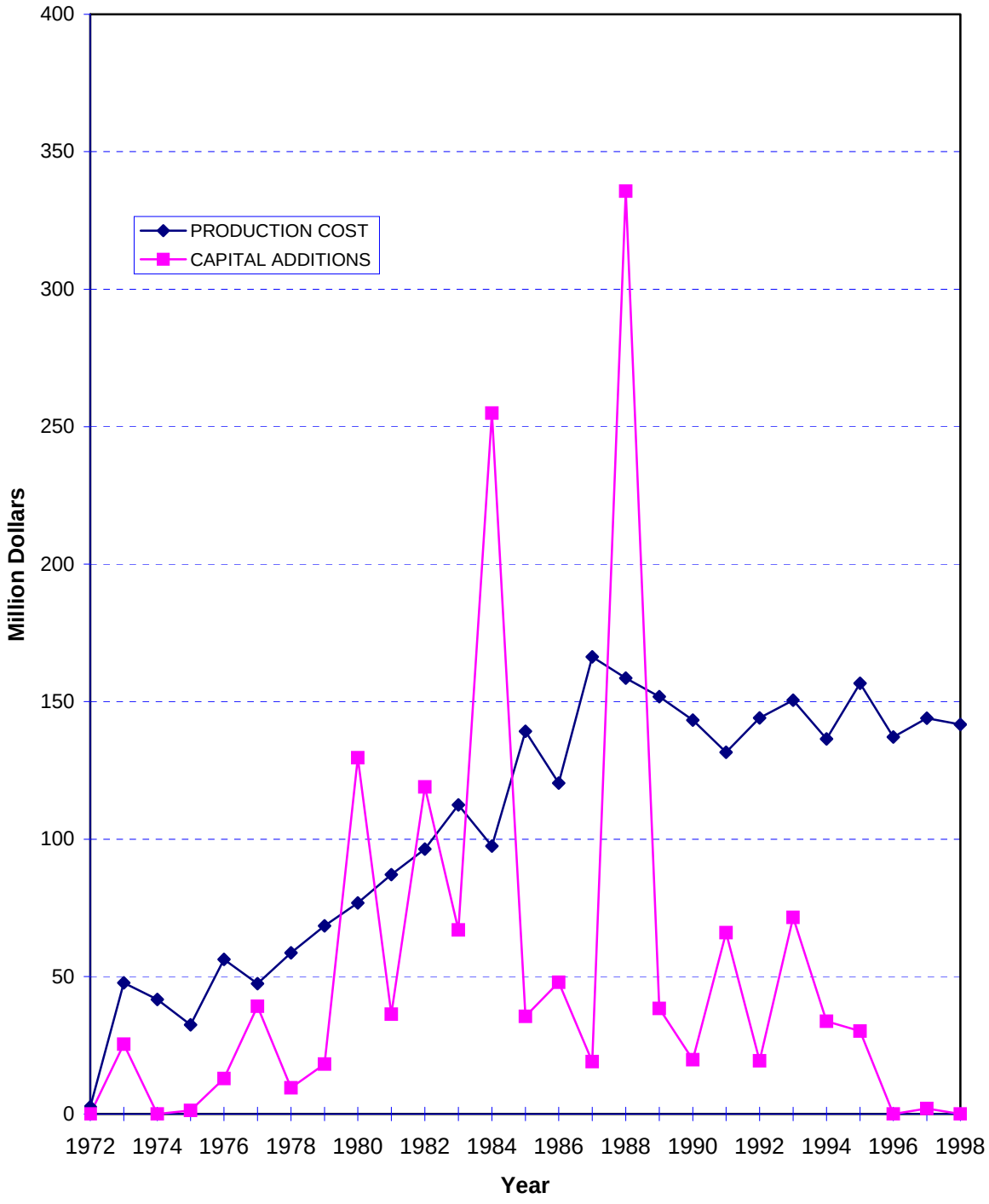
Unit:	**PERRY 1**	Nameplate Rating (MWe):	**1250**
Location:	**Lake County, Ohio**	MDC Net (MWe):	**1241**
Operator:	**FirstEnergy Nuclear Operating Company**	Cumul. Avail. Factor:	**76.0**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**69.4**
Construction Permit:	**5/3/1977**	Cumul. Forced Outage Rate:	**7.8**
Operating License Date:	**11/13/1986**	2-Year Avg. Cap. Factor (MDC Net):	**82.8**
Commercial Oper. Date:	**11/18/1987**	License Expiration Date:	**3/18/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jun 2000		The plant was manually shutdown for a maintenance outage that lasted 11.5 days to remove and replace defective fuel bundles.
Feb 2001	Mar 2001	The unit was taken off-line and shut down for 34.5 days for a refueling outage.
Apr 2001	May 2001	The unit taken off-line because of a stator water leak in the generator of the main turbine generator. A manual scram was inserted due to a loss of main condenser vacuum and reactor recirculation pump B seal degradation. The plant entered a forced outage that lasted 14 days.
May 2001	Jun 2001	The unit was manually shut down due to circulating water pump impeller damage. The forced outage lasted for more than 12 days while all three circulating water pump motors and impellers were replaced.
Jul 2001		The plant experienced a loss of feedwater transient and resulting reactor scram from 100% power due to a blown fuse in a 24 vdc circuit. Shortly after the scram, both the high pressure core spray and the reactor core isolation cooling systems automatically initiated and injected water into the reactor pressure vessel. The forced outage to make repairs lasted 19 days.
Dec 2001		The plant incurred an unplanned automatic scram due to a feedwater control card problem, and entered a forced outage that lasted 4.5 days.

PILGRIM 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

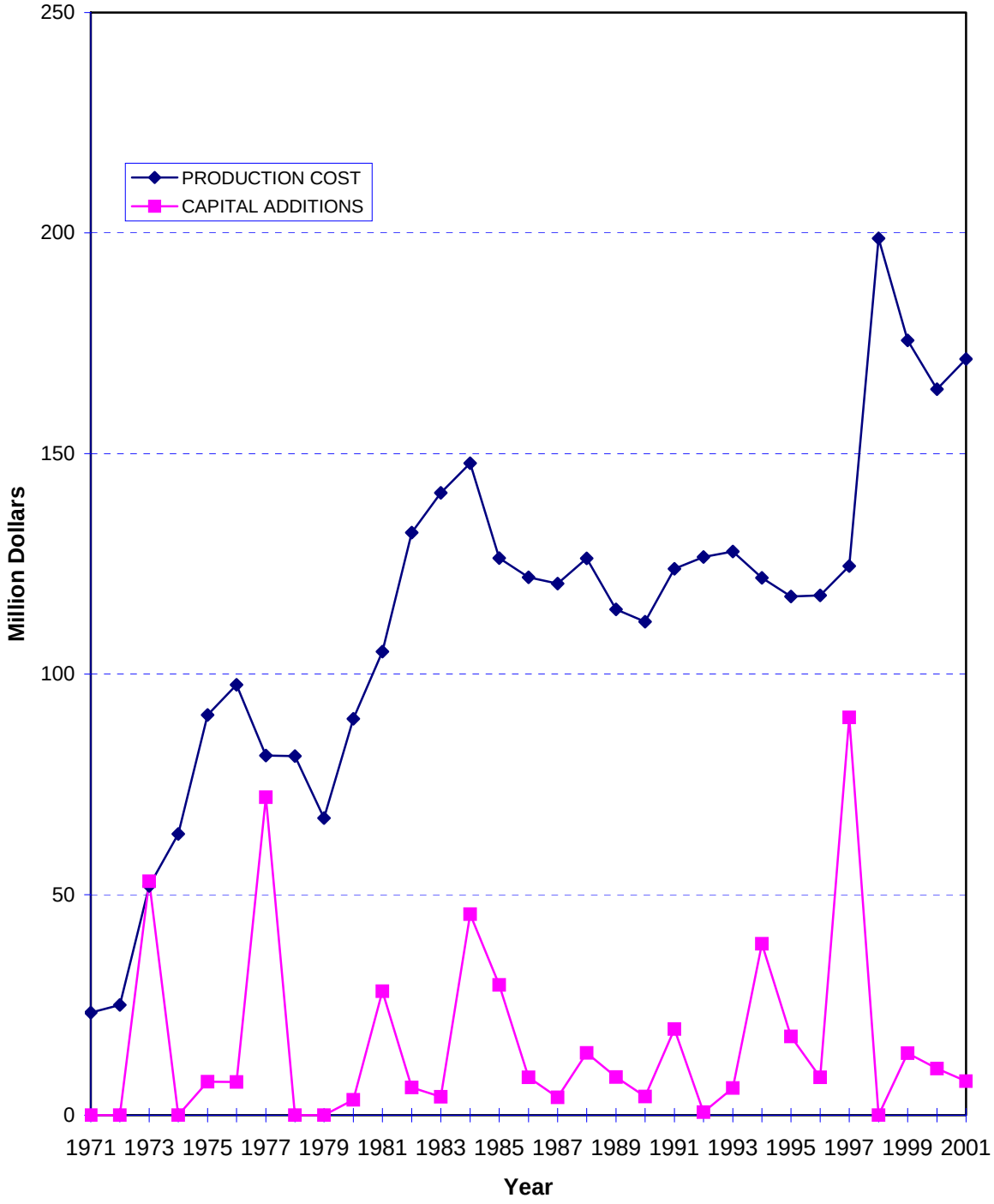
Unit:	**PILGRIM 1**	Nameplate Rating (MWe):	**678**
Location:	**Plymouth County, Massachusetts**	MDC Net (MWe):	**653**
Operator:	**Entergy Nuclear Operations, Inc.**	Cumul. Avail. Factor:	**66.4**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**60.7**
Construction Permit:	**8/26/1968**	Cumul. Forced Outage Rate:	**9.9**
Operating License Date:	**9/15/1972**	2-Year Avg. Cap. Factor (MDC Net):	**91.8**
Commercial Oper. Date:	**12/1/1972**	License Expiration Date:	**6/8/2012**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Aug 2000		Forced outage for six days because of a low lubricating oil sump level for the "B" recirculation pump. Oil was added to restore the sump level to its normal operating range.
Sep 2000	Oct 2000	The plant was shut down for five days to investigate and repair a tube leak in the fifth-point feedwater heater.
Apr 2001	May 2001	The unit was taken off-line and shut down for 28 days for refueling outage number 13. The reactor was scrammed as part of a controlled shutdown for the refueling outage; however, an invalid level signal caused the main steam isolation valves to close during the shutdown. The invalid signal came from the presence of non-condensable gases in the reference leg of a level transmitter, which, in turn, caused "indicated" level to be greater than actual level. This phenomenon is referred to as "notching."
Aug 2001		An automatic scram caused by a procedural error while performing a 4160 v bus protective relay functional test led to a five day forced outage.
Dec 2001		The plant was operating at 100% power and performing a surveillance test on the anticipated transient without scram circuitry. A test equipment failure caused both reactor recirculation pumps to trip and cause a scram. Following the scram, the presence of non-condensable gases in the reference leg of a level transmitter caused the "indicated" level to be greater than the actual level. This phenomenon is referred to as "notching."

POINT BEACH
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**POINT BEACH 1**	Nameplate Rating (MWe):	**524**
Location:	**Manitowoc County, Wisconsin**	MDC Net (MWe):	**510**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**80.9**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**72.9**
Construction Permit:	**7/19/1967**	Cumul. Forced Outage Rate:	**4.6**
Operating License Date:	**10/5/1970**	2-Year Avg. Cap. Factor (MDC Net):	**87.6**
Commercial Oper. Date:	**12/21/1970**	License Expiration Date:	**10/5/2010**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000		Icing of the intake structure caused a decreasing forebay level and subsequent manual scram.
Feb 2000	Mar 2000	The reactor was manually shut down to investigate an indication of a loose part within a steam generator. The outage lasted 14 days.
Apr 2001	May 2001	The unit was taken off-line and shut down for 37 days for a refueling outage.
Sep 2001		The unit had an 11 day forced outage to repair reactor coolant pump, 1P-1B, seal.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**POINT BEACH 2**	Nameplate Rating (MWe):	**524**
Location:	**Manitowoc County, Wisconsin**	MDC Net (MWe):	**512**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**83.4**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**76.3**
Construction Permit:	**7/25/1968**	Cumul. Forced Outage Rate:	**2.2**
Operating License Date:	**3/8/1973**	2-Year Avg. Cap. Factor (MDC Net):	**87.6**
Commercial Oper. Date:	**10/1/1972**	License Expiration Date:	**3/8/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
May 2000		The facility had a four day scheduled maintenance outage.
Oct 2000	Dec 2000	The unit was taken off-line and shut down for 66 days for a refueling outage. The reactor scrammed during the initial startup from the refueling outage when a control power fuse blew. The plant scrammed again during the next startup. The generator lockout relay picked up due to testing the voltage regulator causing the scram from 63% power. A procedure was revised to correct the problem in testing the voltage regulator. The generator lockout was caused by a failed crimp in the main transformer "C" phase CT circuit which actuated the 2-N51 relay. The crimp was repaired to correct the problem. During the outage, Unit 1 was manually scrammed from 100% power when concerns were raised about the safety of contract divers conducting underwater inspections of the common circulating water pump house.
Jun 2001		An influx of small forage fish (Alewives) generated a high differential pressure on the traveling screen in the circulating water pump bay. Eventually, the traveling screen failed causing the bay level to decrease; subsequently, the operators manually scrammed the plant.

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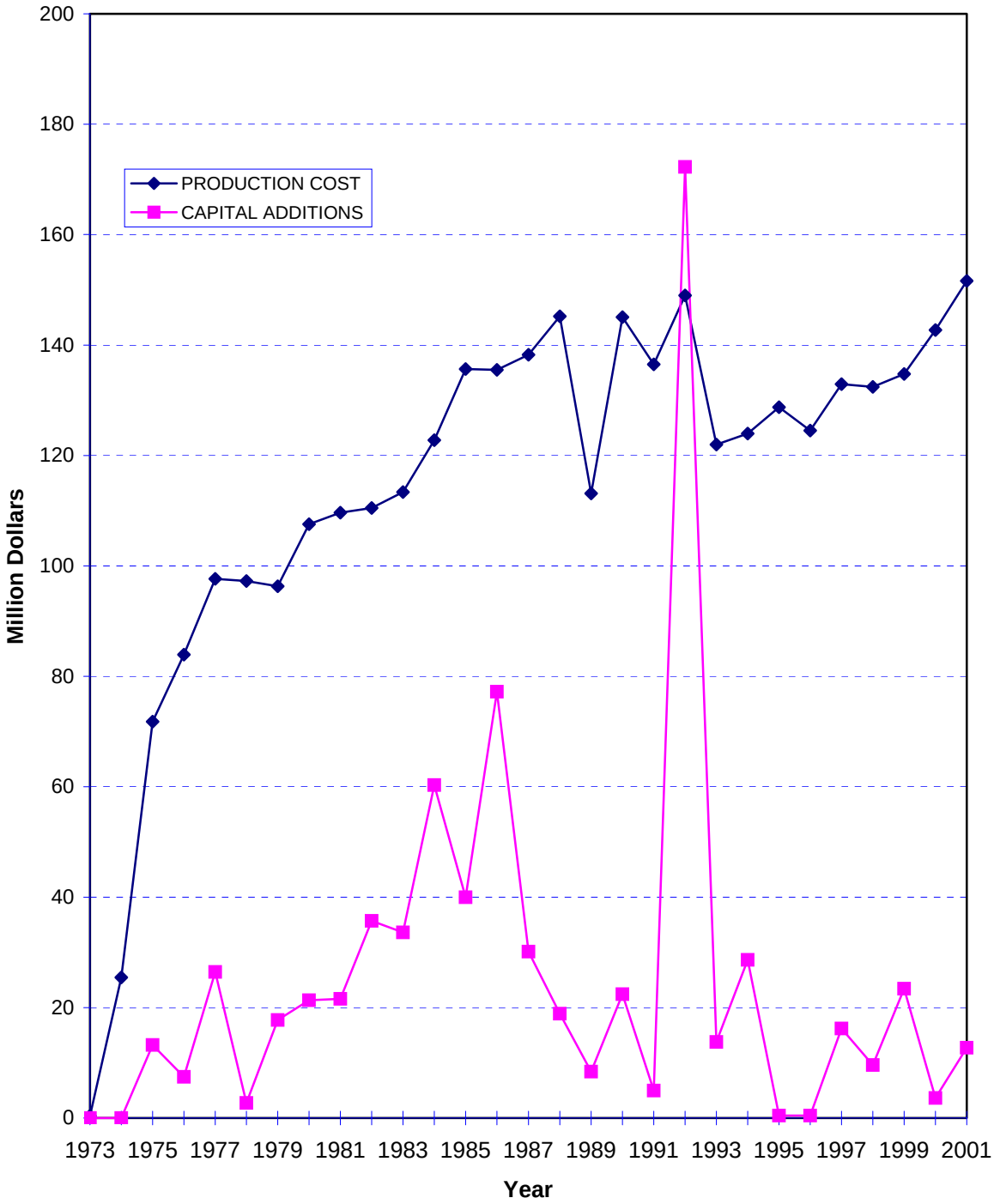
PRAIRIE ISLAND
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**PRAIRIE ISLAND 1**	Nameplate Rating (MWe):	**593**
Location:	**Goodhue County, Minnesota**	MDC Net (MWe):	**522**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**85.4**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**81.6**
Construction Permit:	**6/25/1968**	Cumul. Forced Outage Rate:	**4.7**
Operating License Date:	**4/5/1974**	2-Year Avg. Cap. Factor (MDC Net):	**89.2**
Commercial Oper. Date:	**12/16/1973**	License Expiration Date:	**8/9/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Dec 2000		The unit was shut down for nearly 12 days to perform repair work on the seals for the Number 11 reactor coolant pump.
Jan 2001	Feb 2001	The unit was taken off-line and shut down for 37 days for a refueling outage.
Aug 2001	Sep 2001	The licensee declared an unusual event during power ascension while transferring electric power supplies from the reserve transformer to the main transformer. A fire in 4 KV Bus 12 along with water intrusion caused a short in a rod control cabinet and subsequently a reactor scram. The forced outage for repairs lasted 41 days.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**PRAIRIE ISLAND 2**	Nameplate Rating (MWe):	**593**
Location:	**Goodhue County, Minnesota**	MDC Net (MWe):	**522**
Operator:	**Nuclear Management Company**	Cumul. Avail. Factor:	**87.9**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**83.9**
Construction Permit:	**6/25/1968**	Cumul. Forced Outage Rate:	**3.0**
Operating License Date:	**10/29/1974**	2-Year Avg. Cap. Factor (MDC Net):	**92.2**
Commercial Oper. Date:	**12/21/1974**	License Expiration Date:	**10/29/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	Jun 2000	The unit was taken off-line and shut down for 40 days for a refueling outage.
May 2001	Jun 2001	Emergency diesel generators, D5 and D6, were not operable per the plant technical specifications, because of a lubricating oil/fuel oil problem. The resulting outage to make repairs lasted 27 days.

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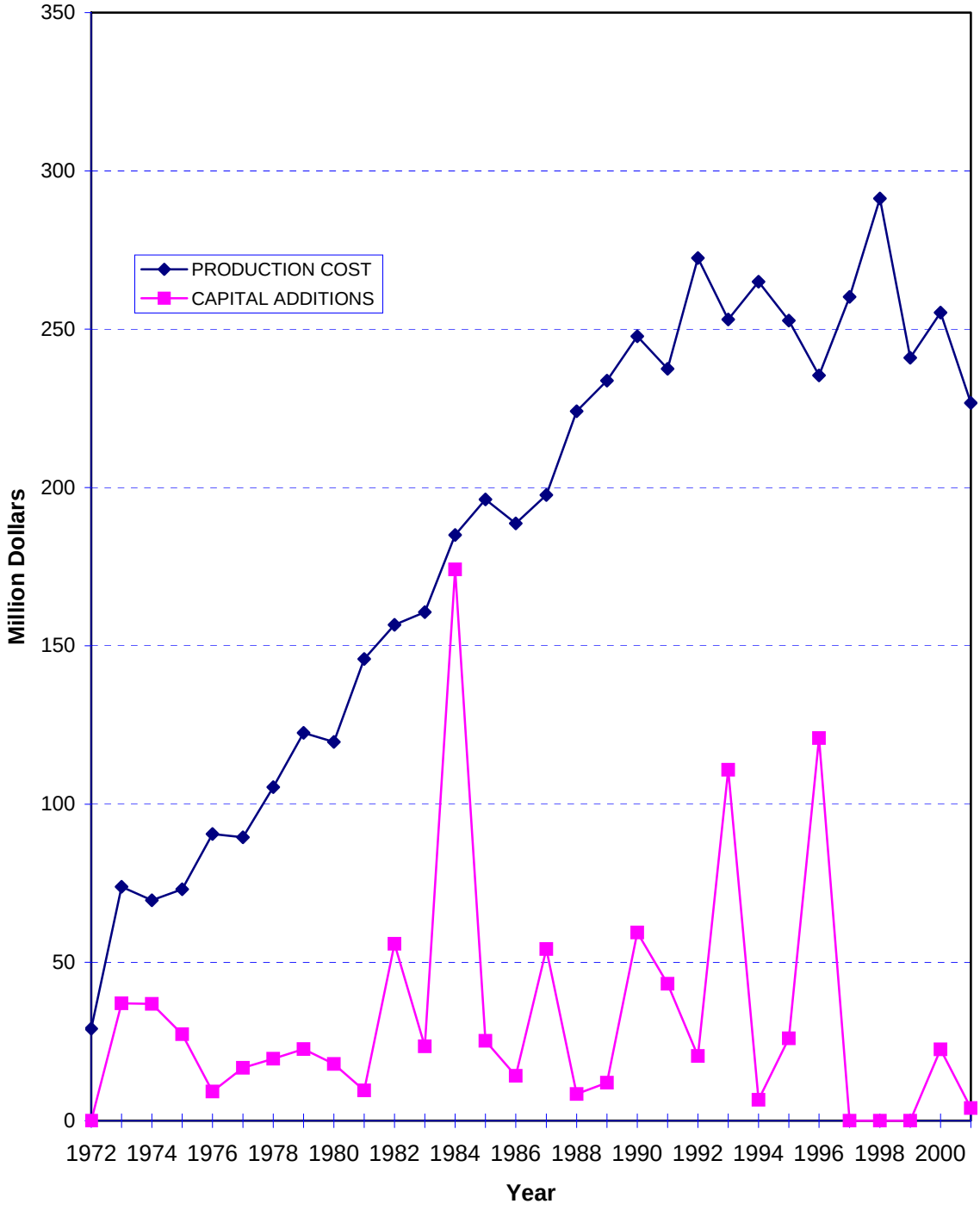
QUAD CITIES
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**QUAD CITIES 1**	Nameplate Rating (MWe):	**828**
Location:	**Rock Island County, Illinois**	MDC Net (MWe):	**769**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**75.9**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**66.9**
Construction Permit:	**2/15/1967**	Cumul. Forced Outage Rate:	**6.7**
Operating License Date:	**12/14/1972**	2-Year Avg. Cap. Factor (MDC Net):	**95.4**
Commercial Oper. Date:	**2/18/1973**	License Expiration Date:	**12/14/2012**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 21 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**QUAD CITIES 2**	Nameplate Rating (MWe):	**828**
Location:	**Rock Island County, Illinois**	MDC Net (MWe):	**769**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**73.8**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**64.7**
Construction Permit:	**2/15/1967**	Cumul. Forced Outage Rate:	**10.0**
Operating License Date:	**12/14/1972**	2-Year Avg. Cap. Factor (MDC Net):	**92.6**
Commercial Oper. Date:	**3/10/1973**	License Expiration Date:	**12/14/2012**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000	Feb 2000	The unit was taken off-line and shut down for 22 days for a refueling outage. During the startup from the outage, high pressure coolant injection failed to start during its surveillance test because a work package had been closed out in error.
Aug 2001		A lightning strike on a high-voltage line away from the plant caused the main power transformer to trip causing a reactor scram; however, the transformer exploded and caught fire as a result of a phase-to-phase fault in the transformer. The fire was extinguished within two and one half hours and the licensee declared an unusual event. The resulting forced outage to make repairs lasted 26 days.

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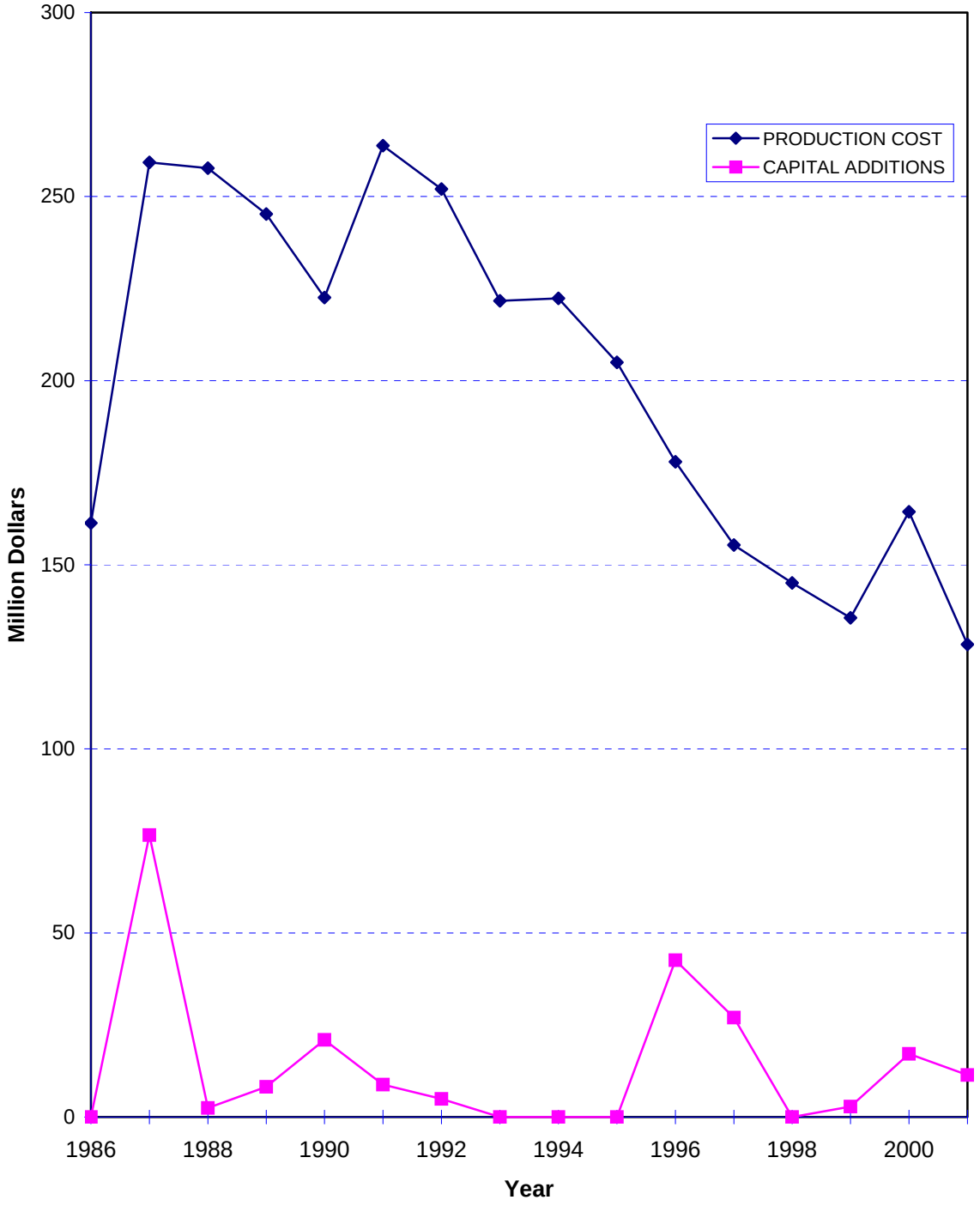
RIVER BEND 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

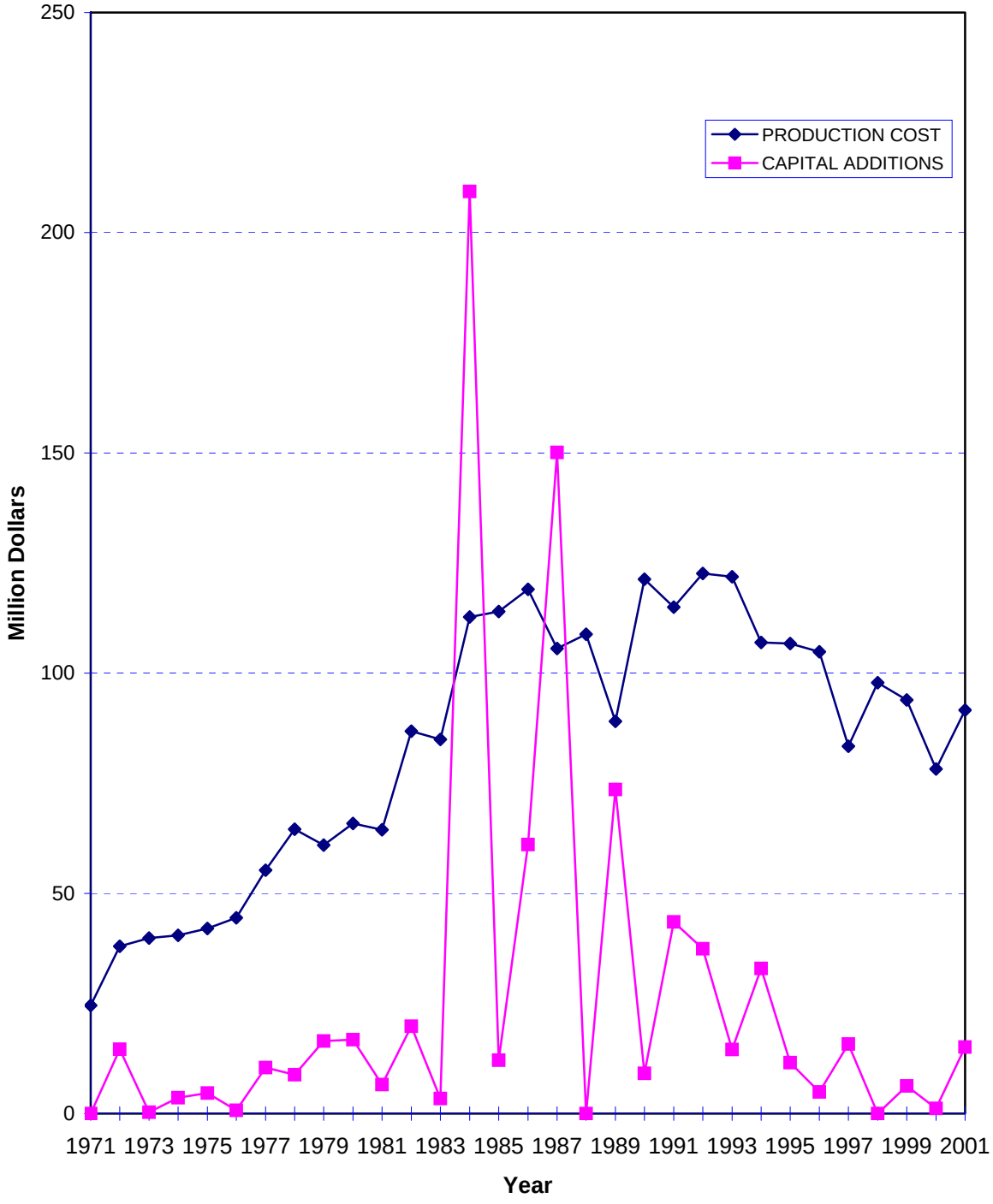
Unit:	**RIVER BEND 1**	Nameplate Rating (MWe):	**936**
Location:	**West Feliciana County, Louisiana**	MDC Net (MWe):	**936**
Operator:	**Entergy Operations, Inc.**	Cumul. Avail. Factor:	**76.5**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**72.5**
Construction Permit:	**3/25/1977**	Cumul. Forced Outage Rate:	**9.4**
Operating License Date:	**11/20/1985**	2-Year Avg. Cap. Factor (MDC Net):	**92.2**
Commercial Oper. Date:	**6/16/1986**	License Expiration Date:	**8/29/2025**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	Apr 2000	The unit was taken off-line and shut down for close to 36 days for a refueling outage.
Aug 2000		During troubleshooting an offgas system alarm, an air purge was initiated in accordance with the alarm response procedure. Main condenser vacuum began decreasing, and could not be maintained, requiring a manual scram. A forced outage of more than five days was necessary to investigate the problem and make repairs.
Apr 2001		Reactor recirculation pump "A" tripped due to an electrical fault. The plant was shut down to investigate and repair the cause of the pump trip. A water leak above the motor caused the motor terminals to become wet via a degraded conduit seal. A main turbine control malfunction occurred during turbine control valve testing during the subsequent restart at the end of the outage, resulting in a reactor scram. Troubleshooting determined the likely cause was an error in the turbine speed signal. The outage lasted for 5.5 days.
Sep 2001	Oct 2001	The unit was taken off-line and shut down for 17 days for a refueling outage.

H.B. ROBINSON 2

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

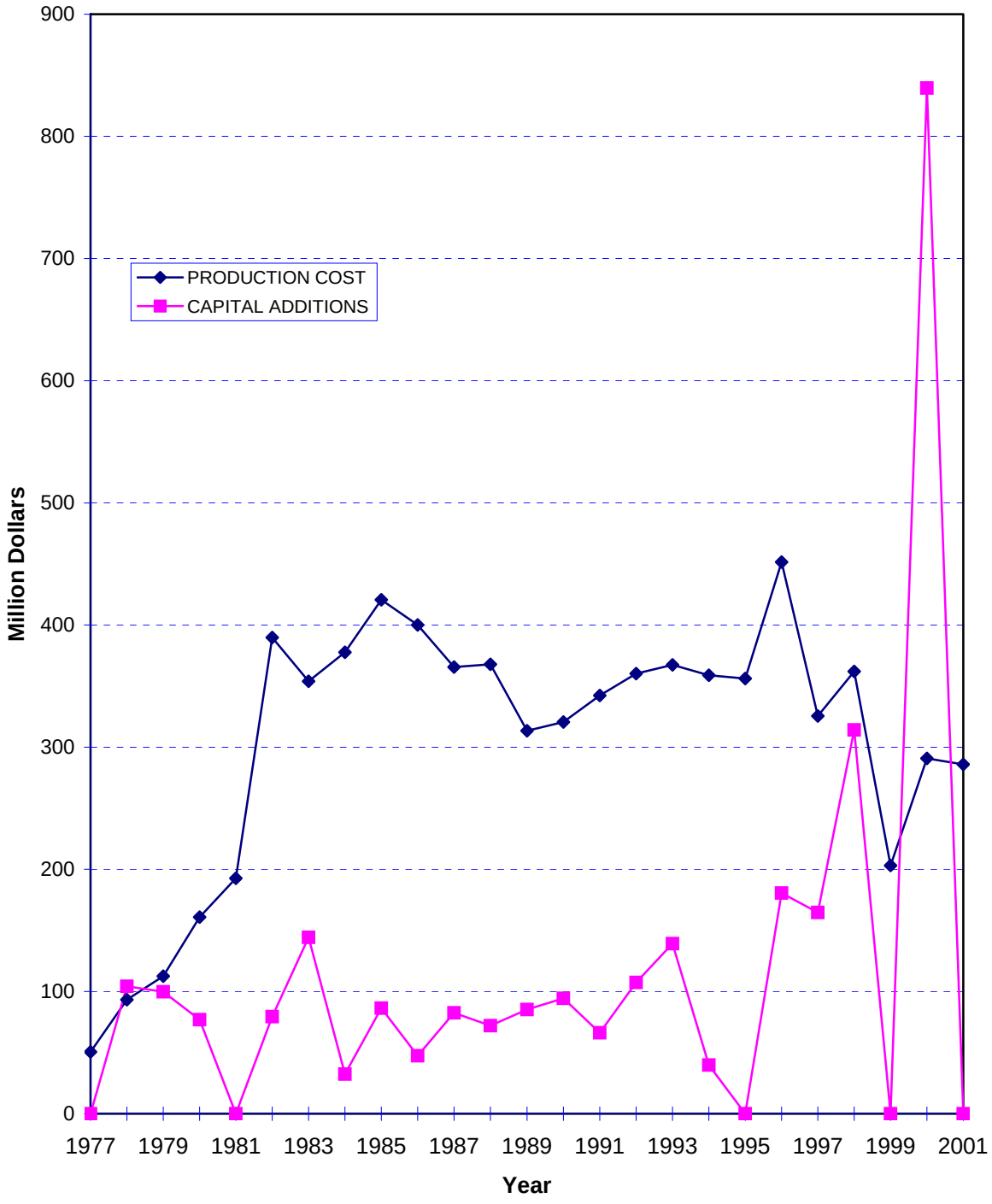
Unit:	**H. B. ROBINSON 2**	Nameplate Rating (MWe):	**739**
Location:	**Darlington County, South Carolina**	MDC Net (MWe):	**683**
Operator:	**Carolina Power & Light Company**	Cumul. Avail. Factor:	**74.2**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**70.6**
Construction Permit:	**4/13/1967**	Cumul. Forced Outage Rate:	**11.6**
Operating License Date:	**9/23/1970**	2-Year Avg. Cap. Factor (MDC Net):	**98.1**
Commercial Oper. Date:	**3/7/1971**	License Expiration Date:	**7/31/2010**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2001	May 2001	The unit was taken off-line and shut down for 35 days for a refueling outage.

SALEM
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SALEM 1**	Nameplate Rating (MWe):	**1170**
Location:	**Salem County, New Jersey**	MDC Net (MWe):	**1096**
Operator:	**PSEG Nuclear, LLC**	Cumul. Avail. Factor:	**60.4**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**55.8**
Construction Permit:	**9/25/1968**	Cumul. Forced Outage Rate:	**27.1**
Operating License Date:	**12/1/1976**	2-Year Avg. Cap. Factor (MDC Net):	**86.2**
Commercial Oper. Date:	**6/30/1977**	License Expiration Date:	**8/13/2016**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000		A loss of feedwater heaters caused a steam generator feed pump to trip due to low suction pressure. The subsequent forced outage lasted eight days.
Apr 2000		A turbine electrohydraulic control system malfunction required a five day outage to repair.
Apr 2001	May 2001	The unit was taken off-line and shut down for 43 days for a refueling outage.
Sep 2001	Oct 2001	The loss of number 2 station power transformer, three of six condenser circulating water pumps, and the traveling screens caused a 21.5 day forced outage for repairs.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SALEM 2**	Nameplate Rating (MWe):	**1170**
Location:	**Salem County, New Jersey**	MDC Net (MWe):	**1092**
Operator:	**PSEG Nuclear, LLC**	Cumul. Avail. Factor:	**61.7**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**57.3**
Construction Permit:	**9/25/1968**	Cumul. Forced Outage Rate:	**26.7**
Operating License Date:	**5/20/1981**	2-Year Avg. Cap. Factor (MDC Net):	**92.9**
Commercial Oper. Date:	**10/13/1981**	License Expiration Date:	**4/18/2020**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 40 days for a refueling outage.
Dec 2001		A pressurizer spray valve failed open and caused a reactor trip and subsequent safety injection.

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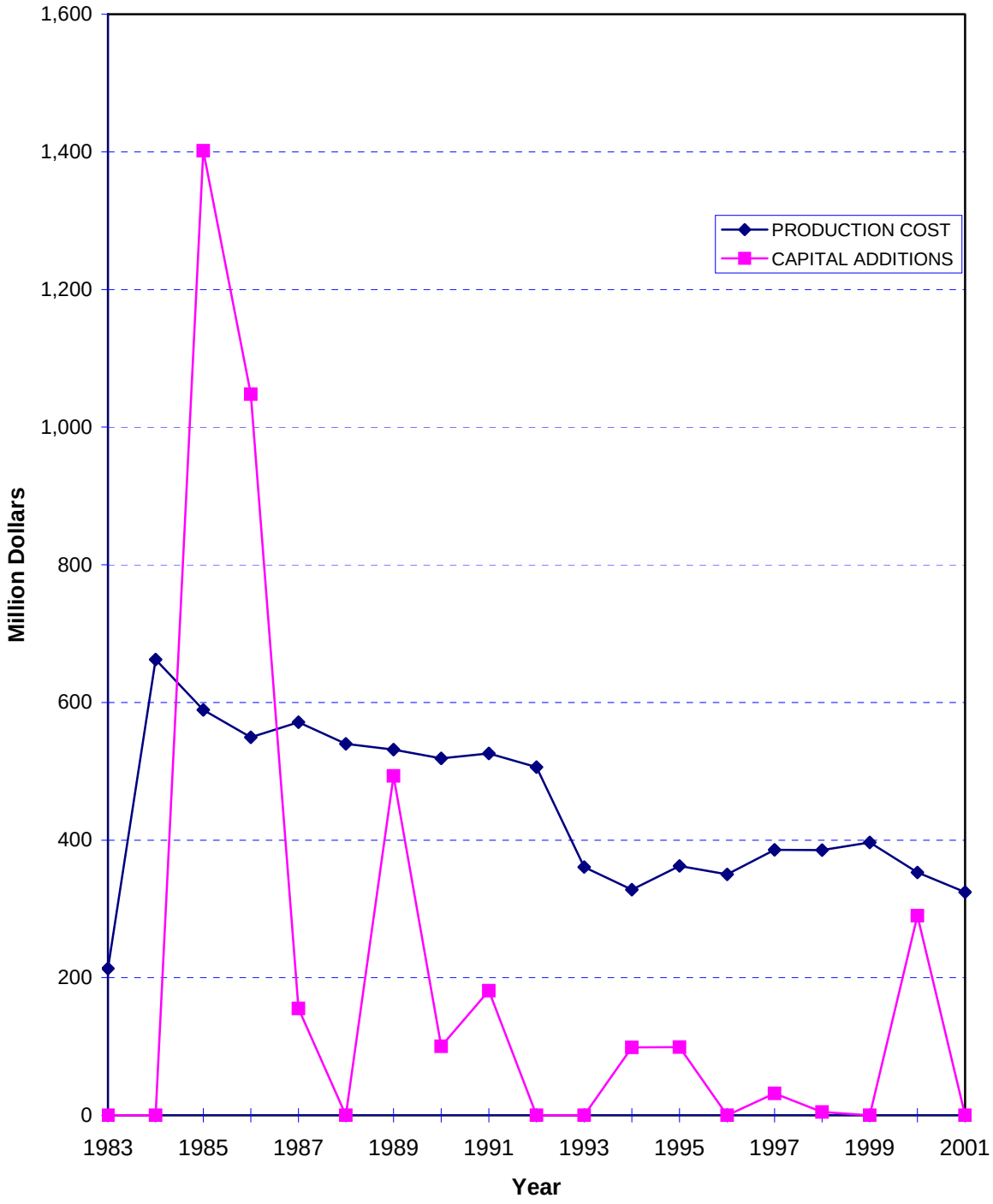
SAN ONOFRE
(Units 2 and 3*)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



*Includes Unit 1 costs thru 1992.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SAN ONOFRE 2**	Nameplate Rating (MWe):	**1127**
Location:	**San Diego County, California**	MDC Net (MWe):	**1070**
Operator:	**Southern California Edison Company**	Cumul. Avail. Factor:	**79.2**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**78.9**
Construction Permit:	**10/18/1973**	Cumul. Forced Outage Rate:	**3.9**
Operating License Date:	**9/7/1982**	2-Year Avg. Cap. Factor (MDC Net):	**96**
Commercial Oper. Date:	**8/8/1983**	License Expiration Date:	**10/18/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 40 days for a refueling outage.
Oct 2001		Scheduled maintenance outage for nine days.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SAN ONOFRE 3**	Nameplate Rating (MWe):	**1127**
Location:	**San Diego County, California**	MDC Net (MWe):	**1080**
Operator:	**Southern California Edison Company**	Cumul. Avail. Factor:	**80.2**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**78.2**
Construction Permit:	**10/18/1973**	Cumul. Forced Outage Rate:	**5.5**
Operating License Date:	**11/15/1982**	2-Year Avg. Cap. Factor (MDC Net):	**80.8**
Commercial Oper. Date:	**4/1/1984**	License Expiration Date:	**10/18/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2001	Jun 2001	The unit was taken off-line and shut down for a refueling outage. The unit was exiting the refueling outage when a fire caused by a circuit breaker failing to make full contact resulted in a complete loss of secondary-side power. Communication glitches during the event delayed firefighters from extinguishing the fire in a timely fashion. The control room staff was concerned that the burning busses might still have been energized and delayed the application of water. The loss of secondary-side power caused a loss of normal flow of lubricating oil to the main turbine generator which subsequently caused extensive damage to the turbine. The licensee declared an unusual event and the resulting outage to make repairs lasted nearly five months (149 days).

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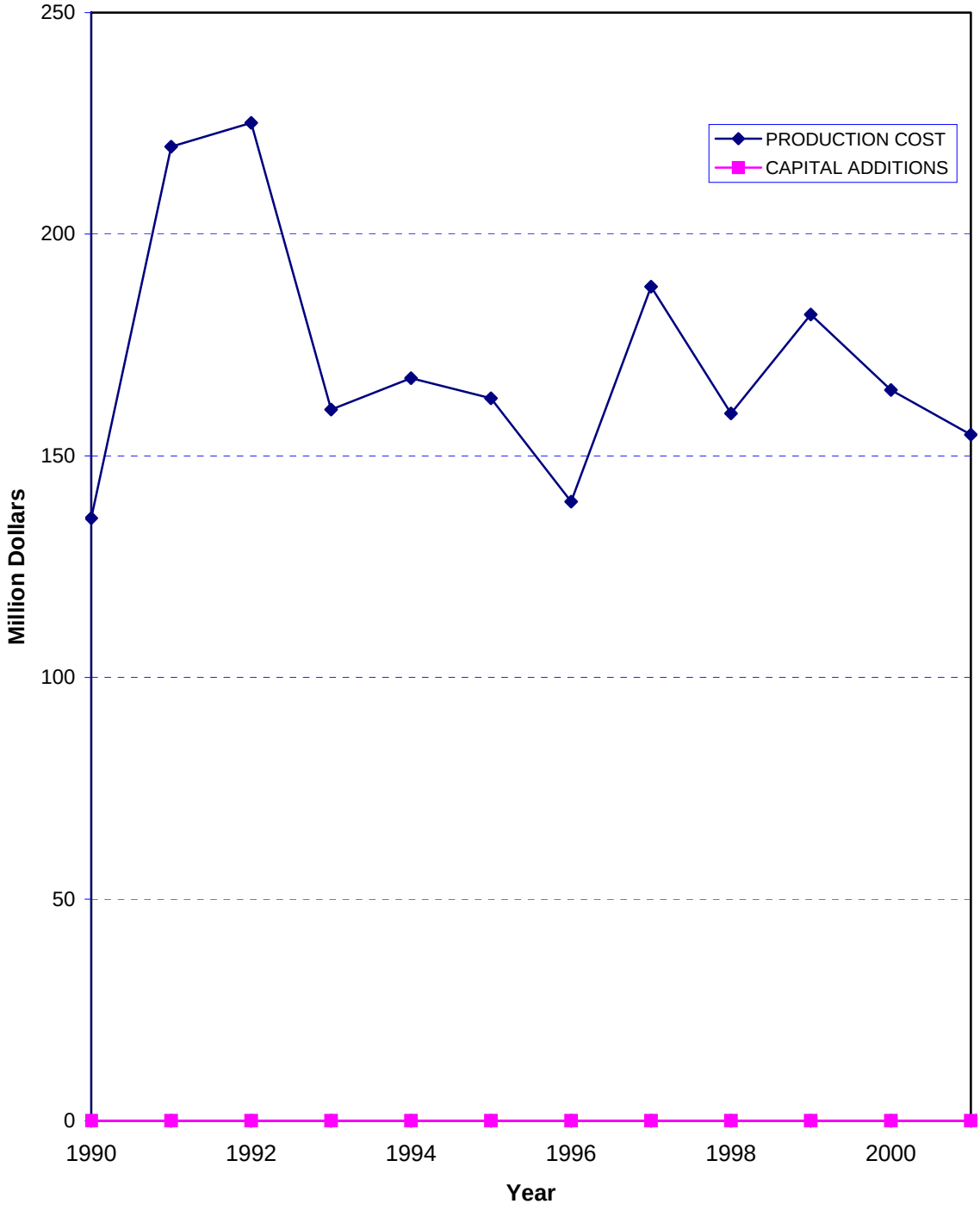
SEABROOK

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

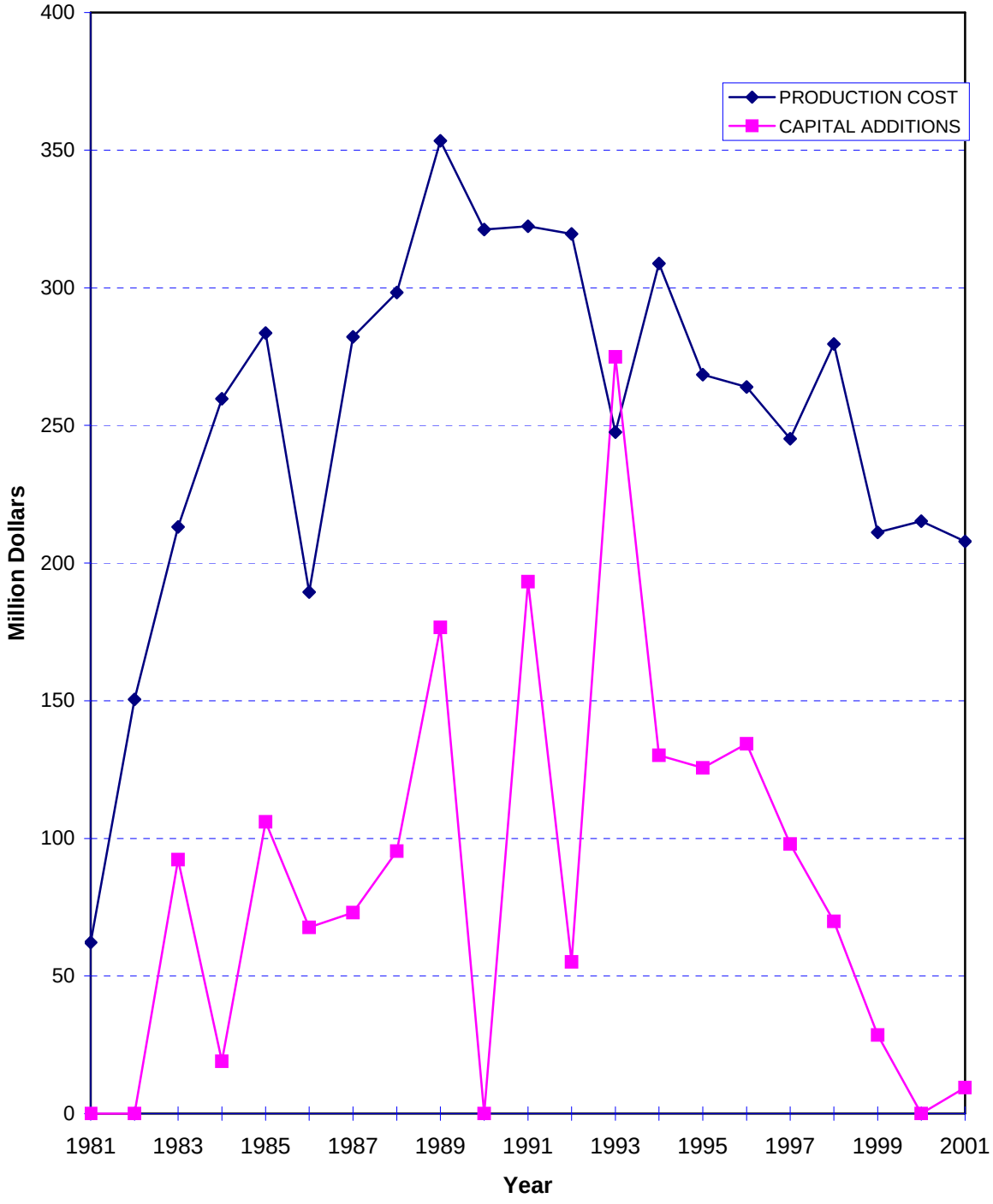
Unit:	**SEABROOK 1**	Nameplate Rating (MWe):	**1197**
Location:	**Rockingham County, New Hampshire**	MDC Net (MWe):	**1155**
Operator:	**North Atlantic Energy Service Corporation**	Cumul. Avail. Factor:	**62.8**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**61.0**
Construction Permit:	**7/7/1976**	Cumul. Forced Outage Rate:	**6.4**
Operating License Date:	**5/26/1989**	2-Year Avg. Cap. Factor (MDC Net):	**82**
Commercial Oper. Date:	**8/19/1990**	License Expiration Date:	**10/17/2026**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Jan 2001	The unit was taken off-line and shut down for more than three months (100 days) for a refueling outage. During the outage, the 1B diesel generator failed a 24 hr surveillance test. The operators shutdown the diesel generator upon receipt of both a high crankcase pressure alarm and a high diesel vibration alarm. During the diesel generator coast down, the crankcase relief cover assemblies lifted and a "fireball" displaced the diesel engine exhauster hose when a crankcase explosion occurred.
Mar 2001		During a severe snowstorm, two of the three 345 KV transmission lines (Scobie and Newington Lines) tripped. As a conservative measure, the unit commenced a power reduction. However, a problem with the turbine electro-hydraulic control system caused the turbine control valves to cycle. The Newington Line was restored; however, the Tewkswbury Line tripped, which resulted in an automatic scram. The licensee also declared an unusual event. Immediately following the scram, the emergency diesel generators started and loaded their respective busses, the reactor coolant pumps tripped, and the circulating water pumps tripped. The plant was in a forced outage for 11 days while repairs were made.
Oct 2001		Control rod, N-11, in shutdown bank D dropped during a control rod operability surveillance. This resulted in an automatic reactor trip from 100% power based on a nuclear instrumentation negative rate. A forced outage of more than four days was required to make repairs.

SEQUOYAH
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SEQUOYAH 1**	Nameplate Rating (MWe):	**1221**
Location:	**Hamilton County, Tennessee**	MDC Net (MWe):	**1122**
Operator:	**Tennessee Valley Authority**	Cumul. Avail. Factor:	**63.9**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**61.7**
Construction Permit:	**5/27/1970**	Cumul. Forced Outage Rate:	**24.4**
Operating License Date:	**9/17/1980**	2-Year Avg. Cap. Factor (MDC Net):	**85**
Commercial Oper. Date:	**7/1/1981**	License Expiration Date:	**9/17/2020**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The NRC proposed a $110,000 fine for a Severity Level II violation involving employment discrimination against a former corporate employee for engaging in protected activities. On May 4, 2001, The NRC issued an Order imposing the monetary penalty. The NRC reviewed the licensee's denial of the violation and protest of the penalty dated January 22, 2000 and concluded that the agency's original proposal remained valid. On June 1, 2001, the licensee requested a hearing in response to the Order. At the close of the fiscal year, the case was still in adjudication with both parties in the discovery process.
Feb 2000	Mar 2000	The unit was taken off-line and removed from the grid to perform a scheduled turbine overspeed test. The unit was then shut down for 24 days for a refueling outage.
Sep 2000	Nov 2000	The lower motor bearing failed on the 1A main feedwater pump (MFP) main oil pump, resulting in the motor tripping on thermal overload. This, in conjunction with a less than optimal adjustment of the 1B MFP turbine governor, caused an automatic reactor trip and a subsequent forced outage to make repairs that lasted nearly 49 days.
Oct 2001	Nov 2001	The unit was taken off-line and shut down for 32 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SEQUOYAH 2**	Nameplate Rating (MWe):	**1221**
Location:	**Hamilton County, Tennessee**	MDC Net (MWe):	**1117**
Operator:	**Tennessee Valley Authority**	Cumul. Avail. Factor:	**69.6**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**66.3**
Construction Permit:	**5/27/1970**	Cumul. Forced Outage Rate:	**22.9**
Operating License Date:	**9/15/1981**	2-Year Avg. Cap. Factor (MDC Net):	**97**
Commercial Oper. Date:	**6/1/1982**	License Expiration Date:	**9/15/2021**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jan 2000		Technicians performing a modification to a vital inverter mistakenly caused a safety injection signal and a reactor trip. Following the scram, an auxiliary feedwater pump tripped and a centrifugal charging pump started for unknown reasons.
Feb 2000		The NRC proposed a $110,000 fine for a Severity Level II violation involving employment discrimination against a former corporate employee for engaging in protected activities. On May 4, 2001, The NRC issued an Order imposing the monetary penalty. The NRC reviewed the licensee's denial of the violation and protest of the penalty dated January 22, 2000 and concluded that the agency's original proposal remained valid. On June 1, 2001, the licensee requested a hearing in response to the Order. At the close of the fiscal year, the case was still in adjudication with both parties in the discovery process.
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 23 days for a refueling outage.

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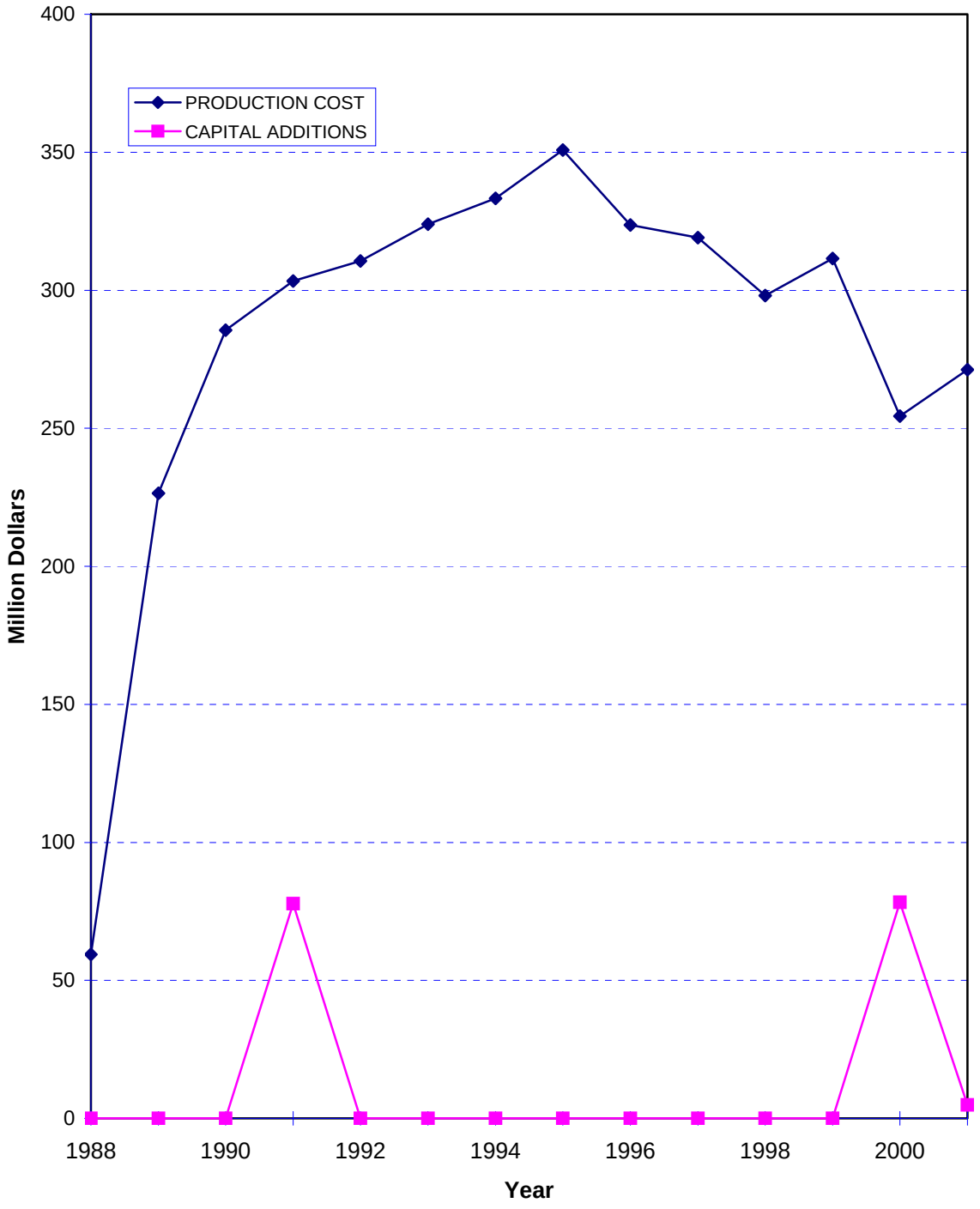
SOUTH TEXAS PROJECT
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SOUTH TEXAS PROJECT 1**	Nameplate Rating (MWe):	**1311**
Location:	**Matagorda County, Texas**	MDC Net (MWe):	**1251**
Operator:	**STP Nuclear Operating Company**	Cumul. Avail. Factor:	**75.9**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**73.8**
Construction Permit:	**12/22/1975**	Cumul. Forced Outage Rate:	**14.3**
Operating License Date:	**3/22/1988**	2-Year Avg. Cap. Factor (MDC Net):	**86.3**
Commercial Oper. Date:	**8/25/1988**	License Expiration Date:	**8/20/2027**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	May 2000	The unit was taken off-line and shut down for nearly 75 days for a refueling outage.
Dec 2000		The plant was conducting main turbine valve surveillances while at 100% power. A logic card in the electrohydraulic controller circuit failed and caused all the turbine governor valves to close. The operators manually scrammed the reactor and manually initiated safety injection following the scram, when a pressurizer spray valve failed open causing reactor coolant system pressure to decrease. An out-of-calibration I/P converter caused the spray valve to open.
Oct 2001		The unit was taken off-line and shut down for almost 22 days for a refueling outage.
Dec 2001		Small fish in the emergency cooling water pond and bays caused an emergency cooling water pump to trip immediately after starting the pump.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SOUTH TEXAS PROJECT 2**	Nameplate Rating (MWe):	**1311**
Location:	**Matagorda County, Texas**	MDC Net (MWe):	**1251**
Operator:	**STP Nuclear Operating Company**	Cumul. Avail. Factor:	**77.9**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**75.6**
Construction Permit:	**12/22/1975**	Cumul. Forced Outage Rate:	**14.0**
Operating License Date:	**12/16/1988**	2-Year Avg. Cap. Factor (MDC Net):	**91.6**
Commercial Oper. Date:	**6/19/1989**	License Expiration Date:	**12/15/2028**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The unit was removed from service to repair a controlled hydrogen leak in the main generator. An anticipated transient without scram mitigating system actuation circuitry (AMSAC) actuation caused a main turbine trip. The actuation resulted from a modification that had introduced reduced operating margin into the AMSAC design, which caused an actuation under plant conditions normal for power ascension. Investigation into the cause for the scram and to make the necessary repairs required a 5.5 day forced outage.
Jun 2000		The unit was removed from service and remained off-line for more than six days to repair a controlled hydrogen leak in the main generator.
Feb 2001		The unit was taken off-line and removed from service to repair a hydrogen leak in the main generator. An inadvertent loss of power occurred to auxiliary and standby busses while performing the electrical plant transfer operations. A loss of power to the 2A reactor coolant pump subsequently occurred, necessitating a manual reactor trip. The forced outage lasted almost five days. During the startup following the outage, during routine bus transfer operations, the 13.8 KV busses were de-energized and the plant was manually scrammed as precaution.
Mar 2001		The plant was operating at 95% power preparing for maintenance on the 345 KV switchyard North Bus. Part of the preparation required closing switchyard breaker, Y600; however, a fabrication or installation error on the breaker caused the 'C' phase of the breaker to remain open. When the operators opened the switchyard breaker, Y590, three operating circulating water pumps tripped and, in response, the operators manually scrammed the plant.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for 27 days for a refueling outage. A reactor coolant system hot leg instrument nozzle was also repaired during the outage.
Oct 2001		The unit was taken off-line and removed from service to repair an emergent steam leak on feedwater isolation valve 2C. The outage lasted six days.

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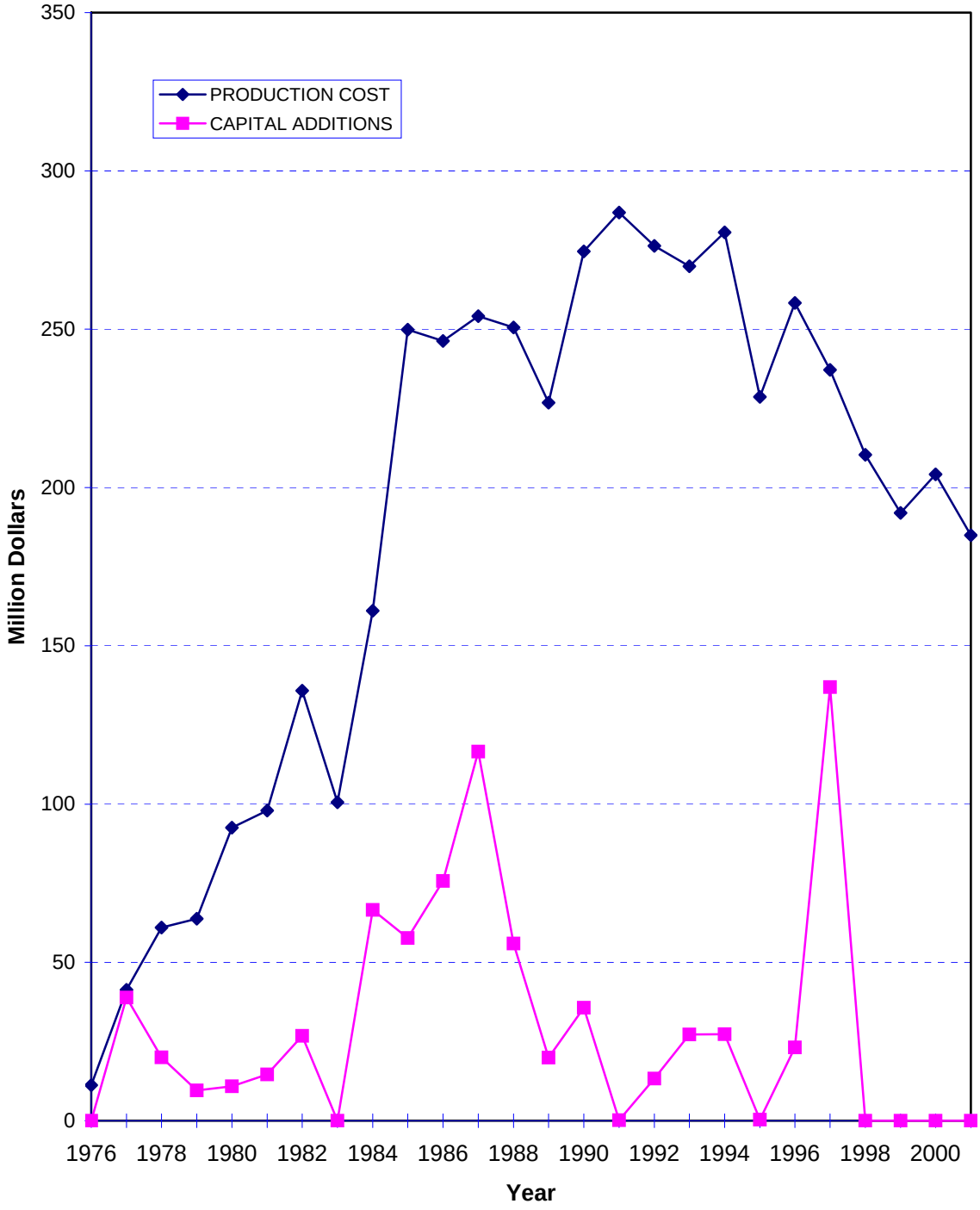
ST LUCIE
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**ST LUCIE 1**	Nameplate Rating (MWe):	**850**
Location:	**St Lucie County, Florida**	MDC Net (MWe):	**839**
Operator:	**Florida Power & Light Company**	Cumul. Avail. Factor:	**79.7**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**77.5**
Construction Permit:	**7/1/1970**	Cumul. Forced Outage Rate:	**4.3**
Operating License Date:	**3/1/1976**	2-Year Avg. Cap. Factor (MDC Net):	**96.6**
Commercial Oper. Date:	**12/21/1976**	License Expiration Date:	**3/1/2016**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2001	May 2001	The unit was taken off-line and shut down for almost 29 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**ST LUCIE 2**	Nameplate Rating (MWe):	**850**
Location:	**St Lucie County, Florida**	MDC Net (MWe):	**839**
Operator:	**Florida Power & Light Company**	Cumul. Avail. Factor:	**85.7**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**84.0**
Construction Permit:	**5/2/1977**	Cumul. Forced Outage Rate:	**4.8**
Operating License Date:	**6/10/1983**	2-Year Avg. Cap. Factor (MDC Net):	**91.6**
Commercial Oper. Date:	**8/8/1983**	License Expiration Date:	**4/6/2023**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	May 2000	The unit was taken off-line and shut down for 30 days for a refueling outage.
Nov 2001	Dec 2001	The unit was taken off-line and shut down for 26 days for a refueling outage.

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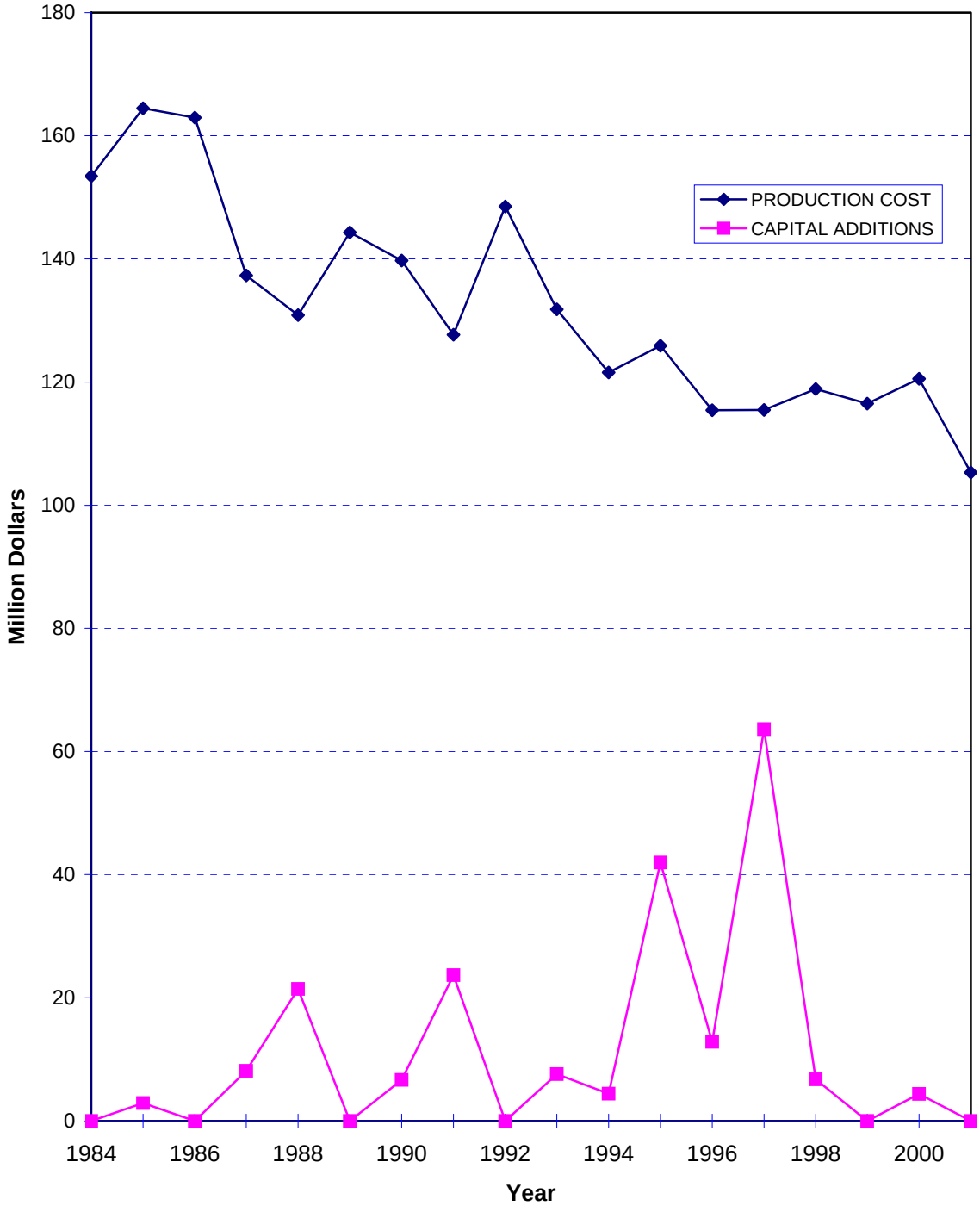
VIRGIL C. SUMMER

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

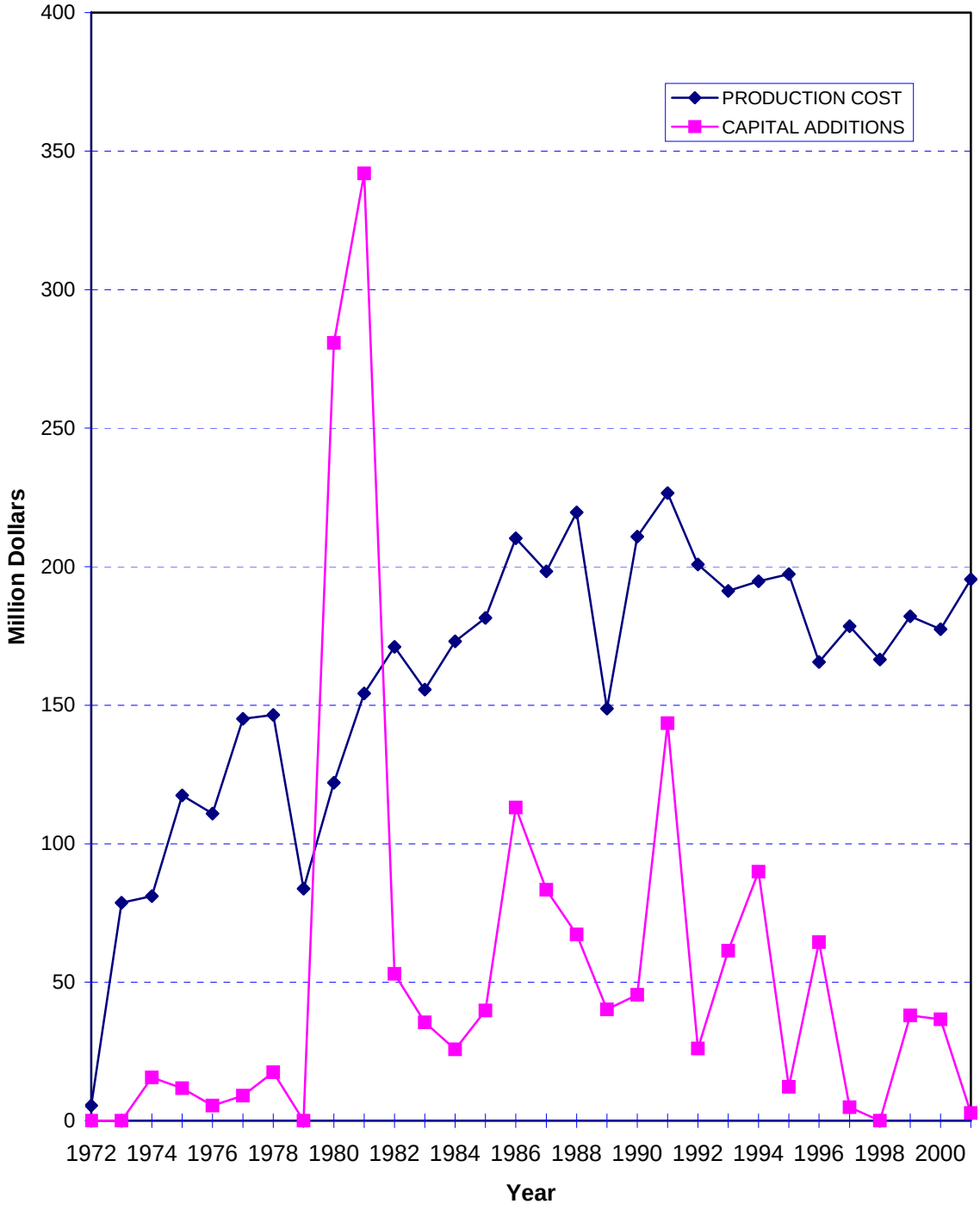
Unit:	**VIRGIL C. SUMMER**	Nameplate Rating (MWe):	**900**
Location:	**Fairfield County, South Carolina**	MDC Net (MWe):	**966**
Operator:	**South Carolina Electric & Gas Company**	Cumul. Avail. Factor:	**82.1**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**73.7**
Construction Permit:	**3/21/1973**	Cumul. Forced Outage Rate:	**3.3**
Operating License Date:	**11/12/1982**	2-Year Avg. Cap. Factor (MDC Net):	**77.4**
Commercial Oper. Date:	**1/1/1984**	License Expiration Date:	**8/6/2022**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Mar 2001	The unit was taken off-line and shut down for nearly five months (147.5 days) for a refueling outage. A reactor vessel nozzle on the reactor coolant system hot leg pipe was also repaired during the outage. The operators manually scrammed the plant during startup testing following the refueling outage when two control rod drives remained fully inserted during withdrawal of the Shutdown Bank 'B' control rods.
Jun 2001		Planned shutdown for more than four days to repair a steam generator shell side steam leakage at the manway and inspection ports.

SURRY
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SURRY 1**	Nameplate Rating (MWe):	**848**
Location:	**Surry County, Virginia**	MDC Net (MWe):	**810**
Operator:	**Dominion Generation**	Cumul. Avail. Factor:	**73.4**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**66.3**
Construction Permit:	**6/25/1968**	Cumul. Forced Outage Rate:	**12.8**
Operating License Date:	**5/25/1972**	2-Year Avg. Cap. Factor (MDC Net):	**88.4**
Commercial Oper. Date:	**12/22/1972**	License Expiration Date:	**5/25/2012**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2000	May 2000	The unit was taken off-line and shut down for 24 days for a refueling outage.
Oct 2001	Dec 2001	The unit was taken off-line and shut down for 56 days for a refueling outage and to repair the reactor pressure vessel head.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SURRY 2**	Nameplate Rating (MWe):	**848**
Location:	**Surry County, Virginia**	MDC Net (MWe):	**815**
Operator:	**Dominion Generation**	Cumul. Avail. Factor:	**72.3**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**66.4**
Construction Permit:	**6/25/1968**	Cumul. Forced Outage Rate:	**10.1**
Operating License Date:	**1/29/1973**	2-Year Avg. Cap. Factor (MDC Net):	**93.5**
Commercial Oper. Date:	**5/1/1973**	License Expiration Date:	**1/29/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 32 days for a refueling outage. Scheduled Unit 2 electro-hydraulic system maintenance work was mistakenly performed on the Unit 1 electro-hydraulic system and resulted in a unit 1 reactor scram from 100% power.
May 2001		The unit was shut down for 10 days for pressurizer safety valve maintenance.
Nov 2001	Dec 2001	Voluntary shut down for 11 days for reactor head inspection and repairs.

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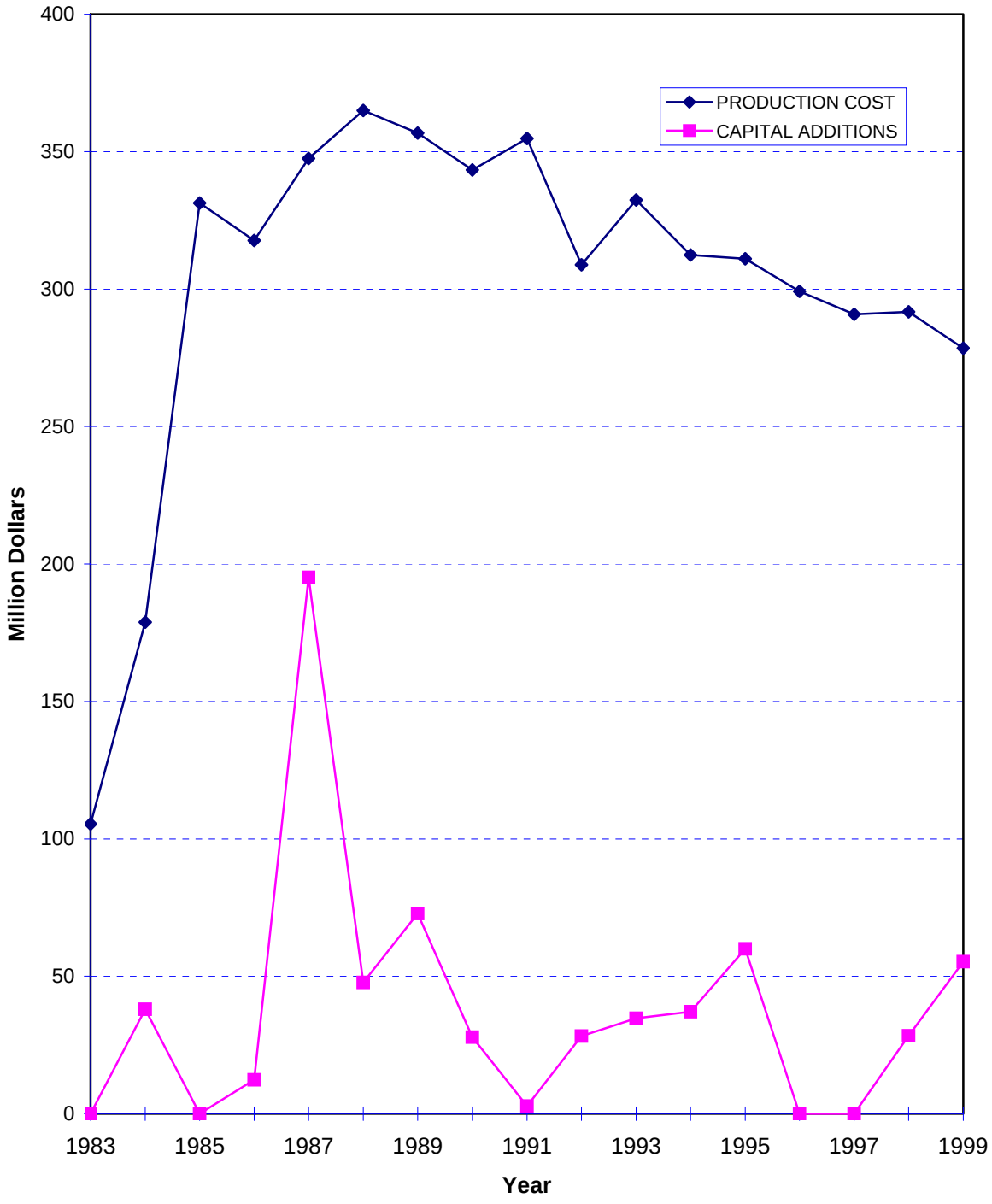
SUSQUEHANNA
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SUSQUEHANNA 1**	Nameplate Rating (MWe):	**1165**
Location:	**Luzerne County, Pennsylvania**	MDC Net (MWe):	**1090**
Operator:	**PPL Susquehanna, LLC**	Cumul. Avail. Factor:	**81.2**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**76.3**
Construction Permit:	**11/2/1973**	Cumul. Forced Outage Rate:	**5.8**
Operating License Date:	**11/12/1982**	2-Year Avg. Cap. Factor (MDC Net):	**92**
Commercial Oper. Date:	**6/8/1983**	License Expiration Date:	**7/17/2022**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Mar 2000	May 2000	The unit was taken off-line and shut down for 48 days for a refueling outage.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**SUSQUEHANNA 2**	Nameplate Rating (MWe):	**1168**
Location:	**Luzerne County, Pennsylvania**	MDC Net (MWe):	**1111**
Operator:	**PPL Susquehanna, LLC**	Cumul. Avail. Factor:	**85.0**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**79.5**
Construction Permit:	**11/2/1973**	Cumul. Forced Outage Rate:	**4.3**
Operating License Date:	**6/27/1984**	2-Year Avg. Cap. Factor (MDC Net):	**91.8**
Commercial Oper. Date:	**2/12/1985**	License Expiration Date:	**3/23/2024**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Aug 2000		The plant was shut down for a suspected leak on the sensing line to the upper seal on the 2A reactor recirculation pump. The subsequent forced outage lasted eight days.
Mar 2001	Apr 2001	The unit was taken off-line and shut down for 44 days for a refueling outage.

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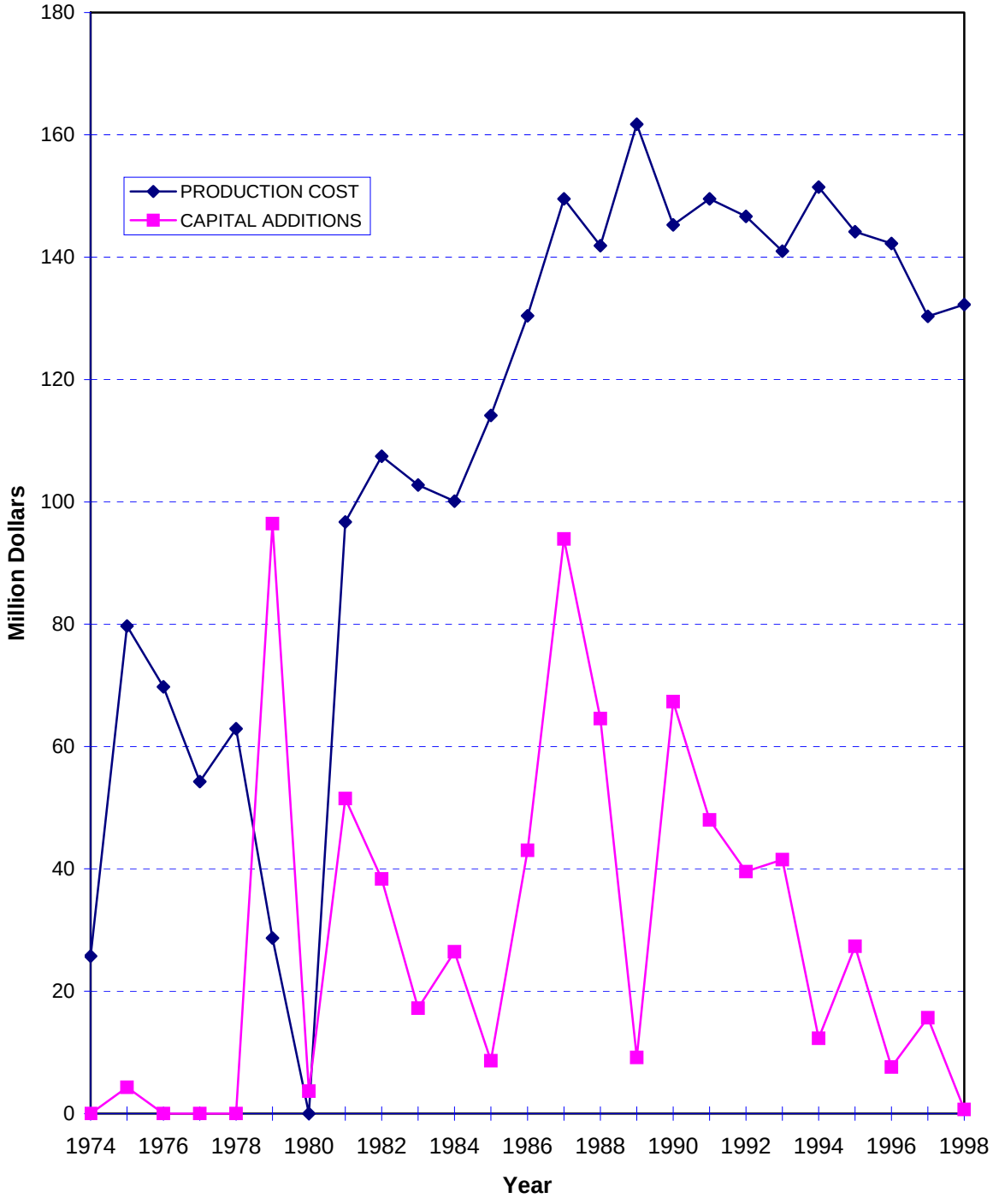
THREE MILE ISLAND 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

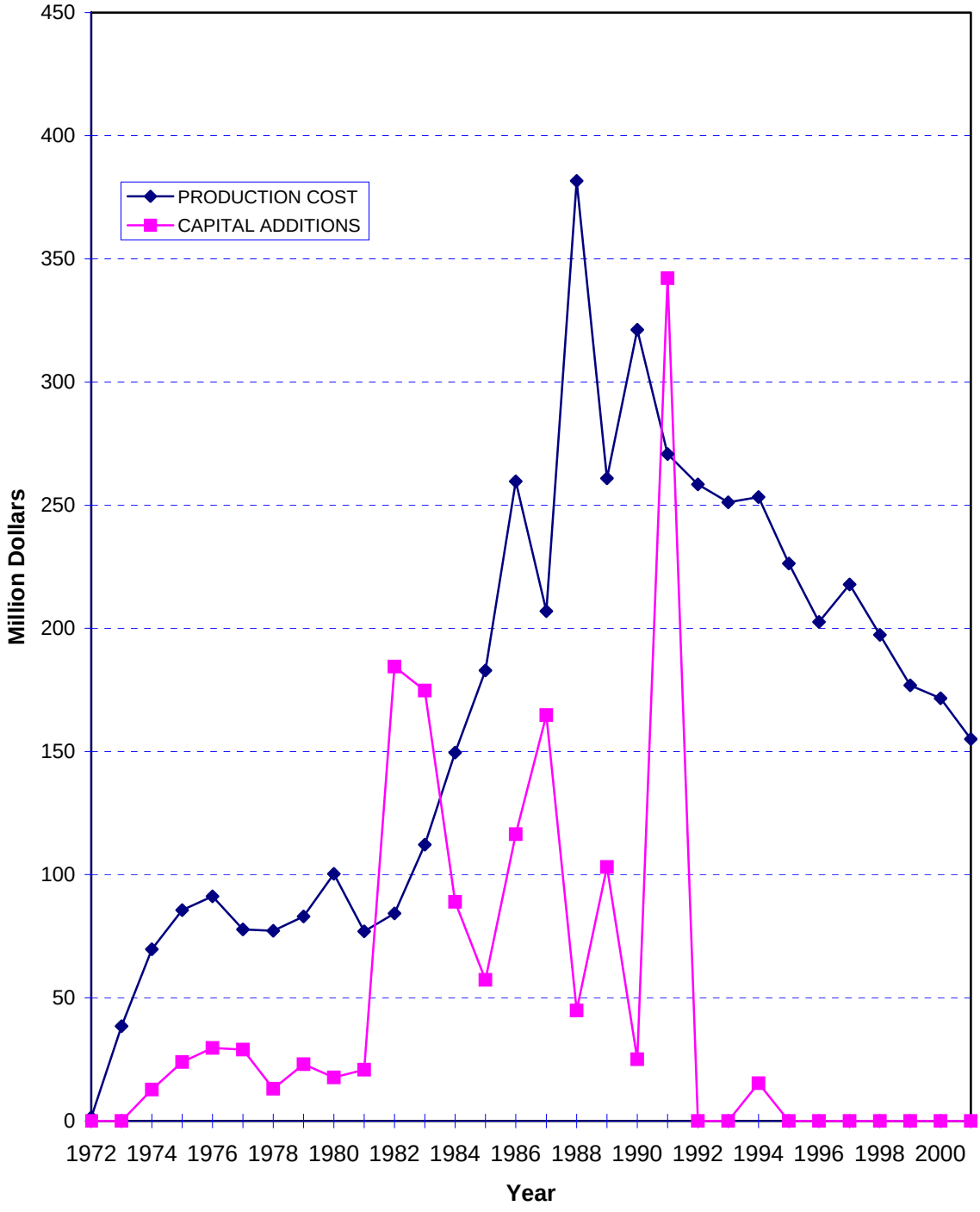
Unit:	**THREE MILE ISLAND 1**	Nameplate Rating (MWe):	**872**
Location:	**Dauphin County, Pennsylvania**	MDC Net (MWe):	**786**
Operator:	**Exelon Nuclear**	Cumul. Avail. Factor:	**65.5**
Type:	**Babcock and Wilcox PWR**	Cumul. Cap. Factor (MDC Net):	**65.3**
Construction Permit:	**5/18/1968**	Cumul. Forced Outage Rate:	**28.0**
Operating License Date:	**4/19/1974**	2-Year Avg. Cap. Factor (MDC Net):	**91.1**
Commercial Oper. Date:	**9/2/1974**	License Expiration Date:	**4/19/2014**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
May 2001		The reactor was shut down almost six days to facilitate troubleshooting and reseating of a leaking safety valve.
Jun 2001		The unit removed from grid to repair the "A" main transformer. The reactor remained critical throughout the six day scheduled outage.
Oct 2001	Dec 2001	The unit was taken off-line and a manual reactor shutdown was completed as part of a planned refueling outage (T1R14) that lasted 59 days.

TURKEY POINT
(Units 3 and 4)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**TURKEY POINT 3**	Nameplate Rating (MWe):	**760**
Location:	**Dade County, Florida**	MDC Net (MWe):	**693**
Operator:	**Florida Power & Light Company**	Cumul. Avail. Factor:	**72.0**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**67.5**
Construction Permit:	**4/27/1967**	Cumul. Forced Outage Rate:	**8.5**
Operating License Date:	**7/19/1972**	2-Year Avg. Cap. Factor (MDC Net):	**92.2**
Commercial Oper. Date:	**12/14/1972**	License Expiration Date:	**7/19/2012**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000	Mar 2000	The unit was taken off-line for a turbine trip test and shut down for 28 days for a refueling outage.
Aug 2001		Power was reduced because of a main condenser tube leak; however, the operators were unable to maintain condenser vacuum so they manually tripped the plant. The resulting forced maintenance outage lasted five days to repair two condenser tubes.
Sep 2001	Oct 2001	A manual reactor trip was performed as part of a unit shut down for a refueling outage that lasted 28 days.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**TURKEY POINT 4**	Nameplate Rating (MWe):	**760**
Location:	**Dade County, Florida**	MDC Net (MWe):	**693**
Operator:	**Florida Power & Light Company**	Cumul. Avail. Factor:	**72.1**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**68.0**
Construction Permit:	**4/27/1967**	Cumul. Forced Outage Rate:	**7.9**
Operating License Date:	**4/10/1973**	2-Year Avg. Cap. Factor (MDC Net):	**96.2**
Commercial Oper. Date:	**9/7/1973**	License Expiration Date:	**4/10/2013**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 28.5 days for a refueling outage. The licensee declared an unusual event during plant startup at the end of the outage when power was lost to the vital busses, causing the emergency diesel generators to start and energize their respective busses.
Jan 2001	Feb 2001	The operators inserted a manual reactor trip due to dropped control rod. The unit had a nearly six day forced outage to repair the control system.

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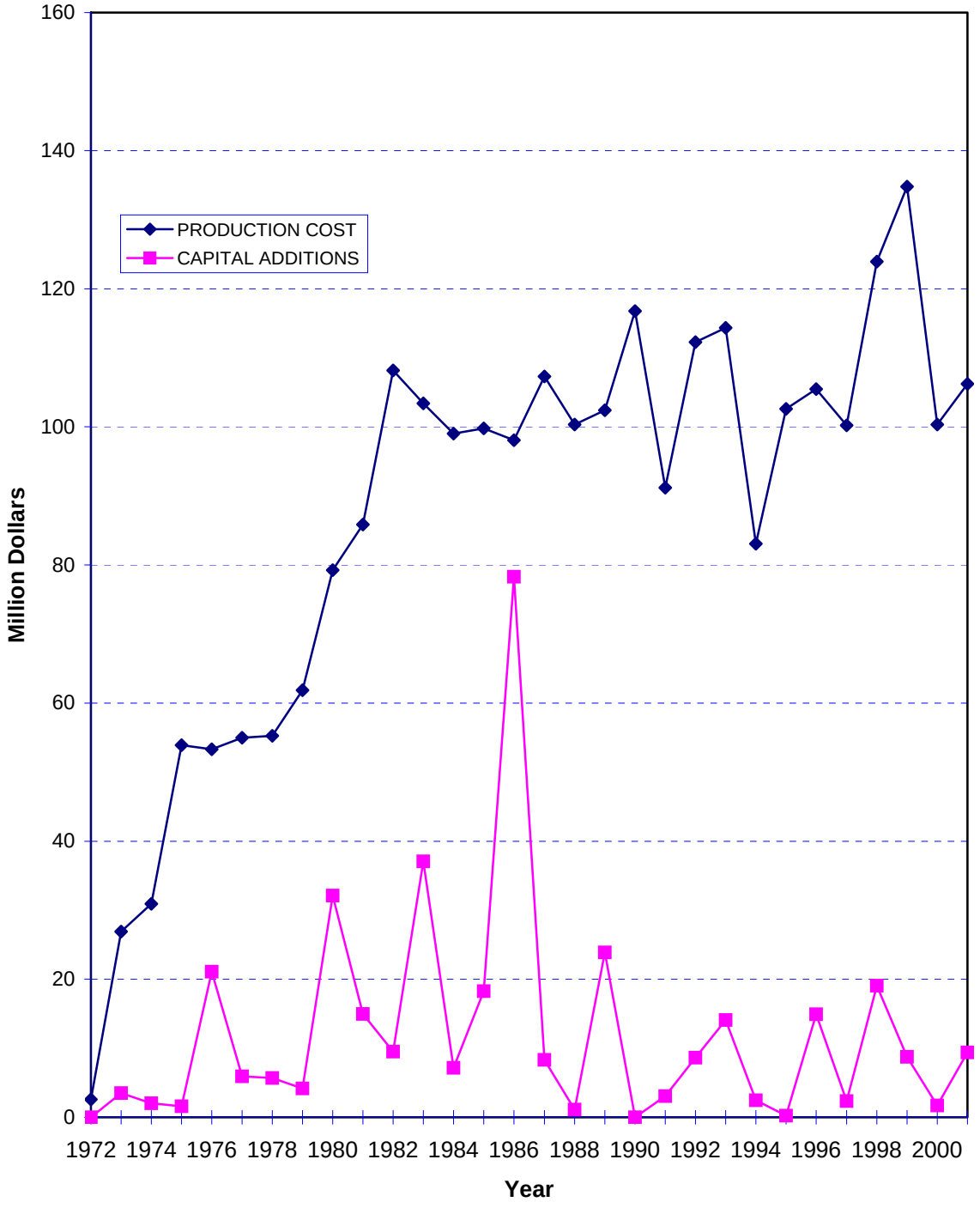
VERMONT YANKEE

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

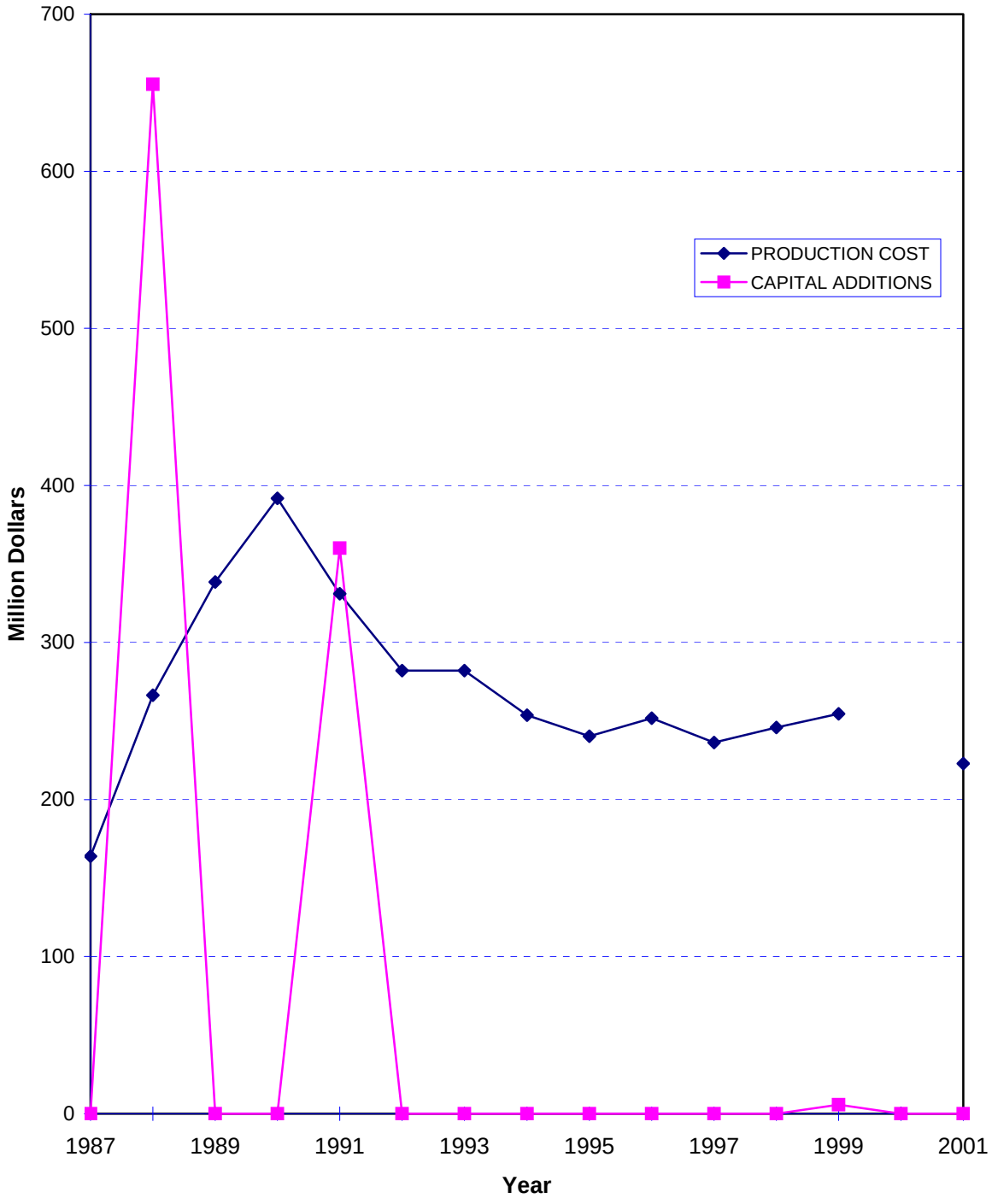
Unit:	**VERMONT YANKEE**	Nameplate Rating (MWe):	**540**
Location:	**Windham County, Vermont**	MDC Net (MWe):	**510**
Operator:	**Entergy Nuclear Operations, Inc.**	Cumul. Avail. Factor:	**83.0**
Type:	**General Electric BWR**	Cumul. Cap. Factor (MDC Net):	**78.6**
Construction Permit:	**12/11/1967**	Cumul. Forced Outage Rate:	**4.2**
Operating License Date:	**2/28/1973**	2-Year Avg. Cap. Factor (MDC Net):	**97.4**
Commercial Oper. Date:	**11/30/1972**	License Expiration Date:	**3/21/2012**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2001	May 2001	The unit was taken off-line and shut down for 23 days for a refueling outage.

ALVIN W. VOGTLE
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**ALVIN W. VOGTLE 1**	Nameplate Rating (MWe):	**1215**
Location:	**Burke County, Georgia**	MDC Net (MWe):	**1148**
Operator:	**Southern Nuclear Operating Company**	Cumul. Avail. Factor:	**88.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**86.1**
Construction Permit:	**6/28/1974**	Cumul. Forced Outage Rate:	**3.3**
Operating License Date:	**3/16/1987**	2-Year Avg. Cap. Factor (MDC Net):	**96**
Commercial Oper. Date:	**6/1/1987**	License Expiration Date:	**1/16/2027**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 31 days for a refueling outage. During the outage, an improper valve lineup and testing process caused both safety injection trains to be declared inoperable while performing safety injection system testing.

NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**ALVIN W. VOGTLE 2**	Nameplate Rating (MWe):	**1215**
Location:	**Burke County, Georgia**	MDC Net (MWe):	**1149**
Operator:	**Southern Nuclear Operating Company**	Cumul. Avail. Factor:	**90.6**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**88.7**
Construction Permit:	**6/28/1974**	Cumul. Forced Outage Rate:	**1.5**
Operating License Date:	**2/8/1989**	2-Year Avg. Cap. Factor (MDC Net):	**98.2**
Commercial Oper. Date:	**5/20/1989**	License Expiration Date:	**2/9/2029**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Apr 2001	May 2001	The reactor was manually tripped due to a loss of main feedwater. The unit was kept off-line and shut down for 27 days for a refueling outage that began the day after the scram.

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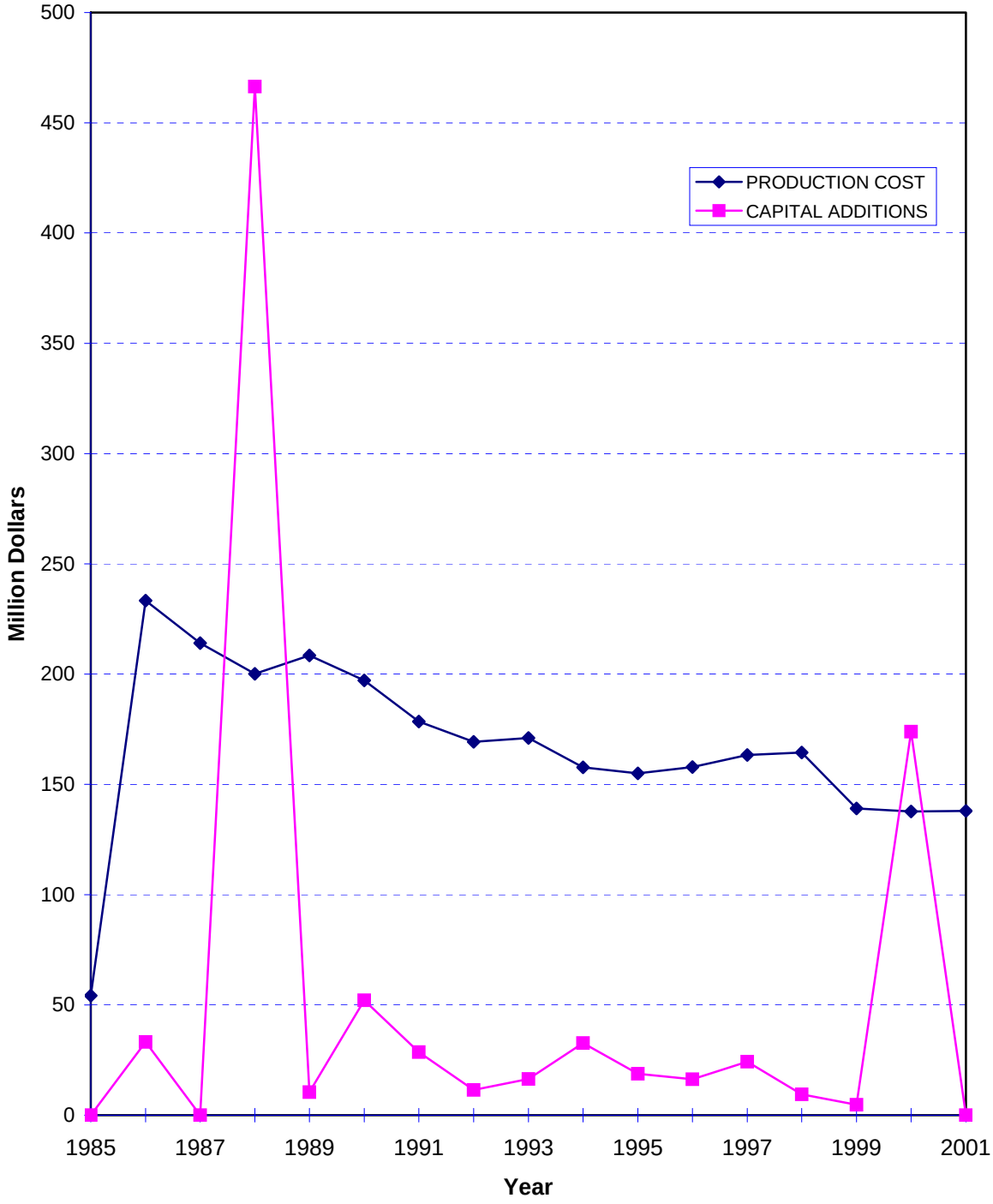
WATERFORD 3

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

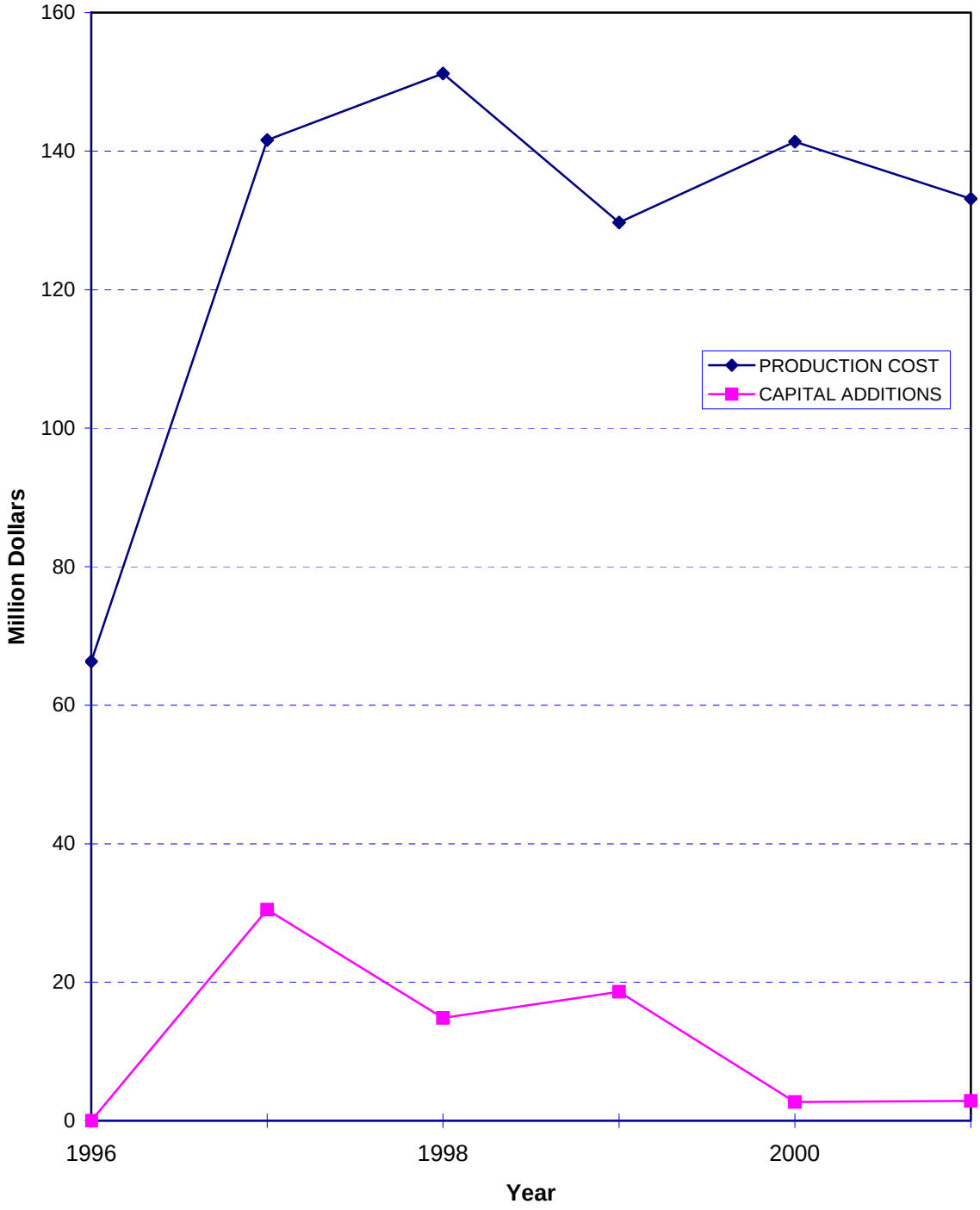
Unit:	**WATERFORD 3**	Nameplate Rating (MWe):	**1200**
Location:	**St Charles County, Louisiana**	MDC Net (MWe):	**1075**
Operator:	**Entergy Operations, Inc.**	Cumul. Avail. Factor:	**84.7**
Type:	**Combustion Engineering PWR**	Cumul. Cap. Factor (MDC Net):	**84.0**
Construction Permit:	**11/14/1974**	Cumul. Forced Outage Rate:	**3.9**
Operating License Date:	**3/16/1985**	2-Year Avg. Cap. Factor (MDC Net):	**95.6**
Commercial Oper. Date:	**9/24/1985**	License Expiration Date:	**12/18/2024**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Jun 2000		Planned maintenance outage for seven days to make repairs to an extraction steam line expansion joint in main condenser C.
Oct 2000	Nov 2000	The unit was taken off-line and shut down for 34.5 days for a refueling outage. Leaking pressurizer heater sleeves were also repaired during the outage.

WATTS BAR 1

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

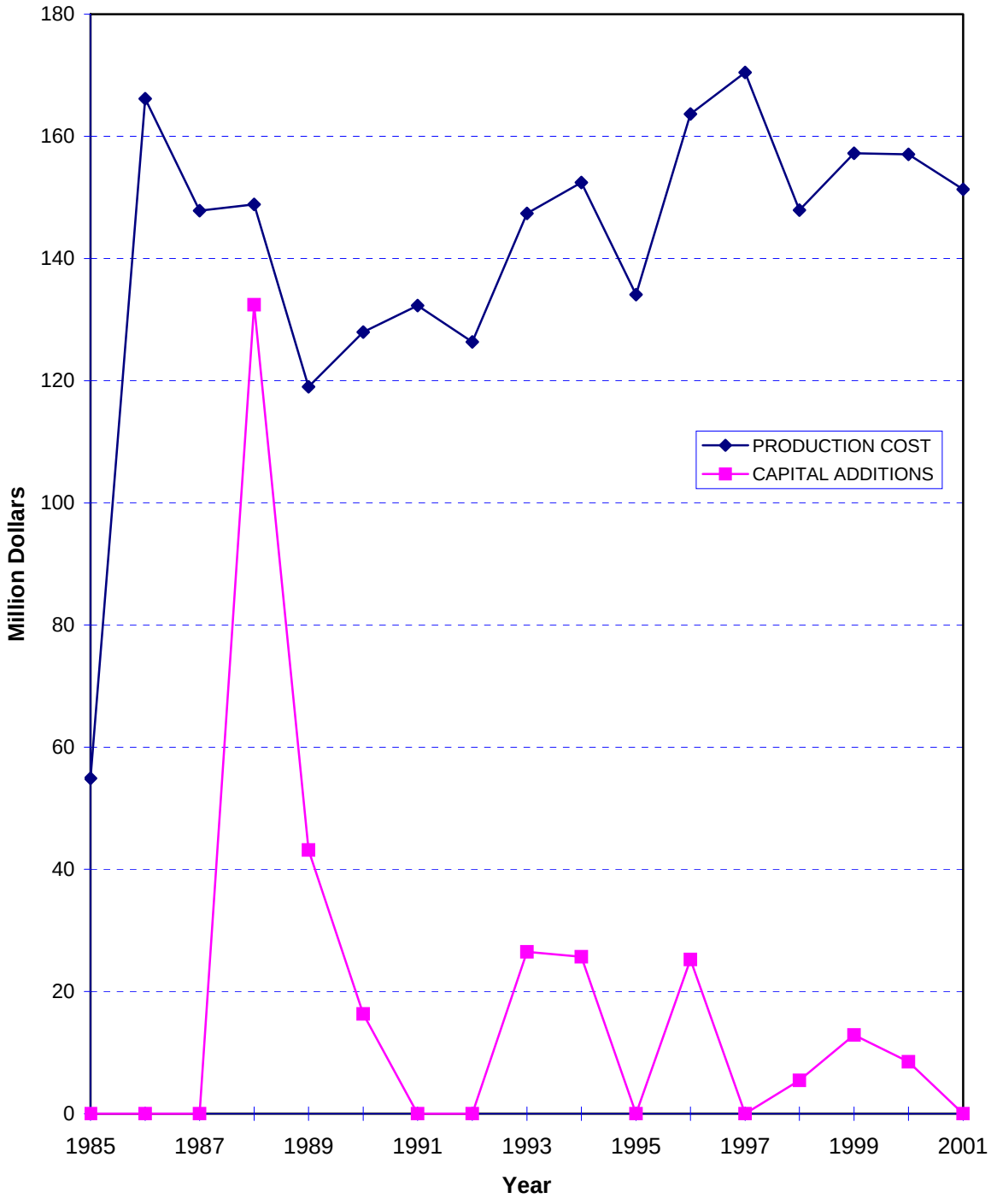
Unit:	**WATTS BAR 1**	Nameplate Rating (MWe):	**1270**
Location:	**Rhea County, Tennessee**	MDC Net (MWe):	**1125**
Operator:	**Tennessee Valley Authority**	Cumul. Avail. Factor:	**91.5**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**89.4**
Construction Permit:	**1/23/1973**	Cumul. Forced Outage Rate:	**1.9**
Operating License Date:	**2/7/1996**	2-Year Avg. Cap. Factor (MDC Net):	**95**
Commercial Oper. Date:	**5/27/1996**	License Expiration Date:	**11/9/2035**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Feb 2000		The NRC proposed a $110,000 fine for a Severity Level II violation involving employment discrimination against a former corporate employee for engaging in protected activities. On May 4, 2001, The NRC issued an Order imposing the monetary penalty. The NRC reviewed the licensee's denial of the violation and protest of the penalty dated January 22, 2000 and concluded that the agency's original proposal remained valid. On June 1, 2001, the licensee requested a hearing in response to the Order. At the close of the fiscal year, the case was still in adjudication with both parties in the discovery process.
Sep 2000	Oct 2000	The unit was taken off-line and shut down for 27.5 days for a refueling outage.
Jun 2001	Jul 2001	The plant had a forced outage that lasted 11 days. The operators manually tripped the unit due to main condenser backpressure caused by reduced circulating water flow that was due to cooling tower fill material obstructing the intake flume screens to the component cooling water pumps.

WOLF CREEK 1
(Units 1 and 2)

PRODUCTION COST AND CAPITAL ADDITIONS
(2001 Dollars)



NUCLEAR POWER PLANT OPERATING EXPERIENCE SUMMARY

Unit Data Summary (Through December 2001)

Unit:	**WOLF CREEK 1**	Nameplate Rating (MWe):	**1236**
Location:	**Coffey County, Kansas**	MDC Net (MWe):	**1170**
Operator:	**Wolf Creek Nuclear Operating Corporation**	Cumul. Avail. Factor:	**84.7**
Type:	**Westinghouse PWR**	Cumul. Cap. Factor (MDC Net):	**81.8**
Construction Permit:	**5/31/1977**	Cumul. Forced Outage Rate:	**2.7**
Operating License Date:	**6/4/1985**	2-Year Avg. Cap. Factor (MDC Net):	**94.6**
Commercial Oper. Date:	**9/3/1985**	License Expiration Date:	**3/11/2025**

Operating History (January 2000 Through December 2001)

Beginning Date	Ending Date	Comment
Sep 2000		A squirrel contacted the connection of the capacitors on the unit auxiliary transformer, causing a failure of and a fire in the transformer. Two reactor coolant pumps tripped causing a reactor scram from 100% power followed by a main turbine trip.
Sep 2000	Nov 2000	The unit was taken off-line and shut down for 41 days for a refueling outage.

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R. B. Uleck, NRC Technical Monitor

11. ABSTRACT *(200 words or less)*

The *U.S. Nuclear Power Plant Operating Cost and Experience Summaries* (NUREG/CR-6577, Supp. 2) report has been prepared to provide historical operating cost and experience information on U.S. commercial nuclear power plants during 2000–2001. Costs incurred after initial construction are characterized as annual production costs, which represent fuel and plant operating and maintenance expenses, and capital expenditures related to facility additions/modifications, which are included in the plant capital asset base. As discussed in the report, annual data for these two cost categories were obtained from publicly available reports and must be accepted as having different degrees of accuracy and completeness. Treatment of inconclusive and incomplete data is discussed.

As an aid to understanding the fluctuations in the cost histories, operations summaries for each nuclear unit are provided. The intent of these summaries is to identify important operating events; refueling, major maintenance, and other significant outages; operating milestones; and significant licensing or enforcement actions. Information used in the summaries is condensed from operating reports submitted by the licensees, the Nuclear Regulatory Commission (NRC) database for enforcement actions, and outage reports.

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