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U.S. Nuclear Regulatory Commission (NRC)
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Duke Energy Carolinas, LLC (Duke Energy)
Catawba Nuclear Station, Units 1 and 2
Docket Numbers 50-413 and 50-414
Snubber Program Plan for the Fourth Ten-Year Inservice Testing Interval

In accordance with the American Society of Mechanical Engineers Code for Operation and Maintenance of Nuclear Power Plants (ASME OM Code), Subparagraph ISTA-3200(a), Catawba Nuclear Station is submitting for your information a copy of Catawba Administrative Procedure AD-EG-CNS-1618, "Snubber Program Plan". The snubber program fourth ten-year interval runs from August 19, 2015 to August 19, 2025.

In accordance with 10 CFR 50.55a(b)(3)(v)(B), the program was developed to satisfy the snubber preservice and inservice testing and examination requirements of the ASME OM Code 2004 Edition with 2005 and 2006 Addenda. For reference, the ASME Section XI Code of Record for this interval is the 2007 Edition with 2008 Addenda.

There are no regulatory commitments contained in this letter or its attachment.

Very truly yours,

 FOR

Kelvin Henderson
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LJR/s

Attachment

AD47
NRR

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ATTACHMENT

CATAWBA ADMINISTRATIVE PROCEDURE AD-EG-CNS-1618

SNUBBER PROGRAM PLAN

REVISION 002



Information Use

CATAWBA
ADMINISTRATIVE PROCEDURE

AD-EG-CNS-1618

SNUBBER PROGRAM PLAN

REVISION 002

Effective Dates:

NA
Site 1

NA
Site 2

NA
Site 3

NA
Site 4

NA
Site 5

NA
Site 6

NA
Site 7

NA
Site 8

NA
Site 9

NA
Site 10

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Site 11

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Site 12

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Site 13

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Site 14

NA
Site 15

REVISION SUMMARY
PRR AR02031939 DESCRIPTION
Revised procedure to correct editorial error in procedure number. No other changes made at this time.

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1.0 PURPOSE

1. This procedure documents the methods used to develop, administer, and implement the Snubber Program at Catawba Nuclear Station (CNS) Units 1 and 2.

2.0 GOVERNANCE AND SCOPE

1. 10CFR50.55a stipulates the ASME Code for Operation and Maintenance of Nuclear Power Plants, 2004 edition through 2006 addenda, for the inspection and testing of snubbers. Specifically Subsections ISTA and ISTD will govern snubber examination and testing activities, including the utilization of Code Case OMN-13. This is effective for the fourth 10-year IST interval for both units 1 and 2 which has a start date of 8/19/2015 (The snubber IST Interval is intended to coincide with the Section XI ISI Interval - but is not required to do so).
2. The program scope envelopes the scope described in the ASME Code for Operation and Maintenance of Nuclear Power Plants, 2004 edition through 2006 addenda, Subsection ISTA, Article ISTA-1100 which is defined as the following:
 - a. Snubbers used in systems that perform a specific function in shutting down a reactor to the safe shutdown condition
 - b. Snubbers used to maintain the safe shutdown condition
 - c. Snubbers employed to mitigate the consequences of an accident
 - d. Snubbers used to ensure the integrity of the reactor coolant pressure boundary
3. This procedure also applies to snubbers addressed in Selected Licensee Commitment (SLC) 16.9-13. Snubber scope as identified in SLC 16.9-13 consists of all snubbers except those snubbers installed on non-safety related systems, which may be excluded provided their failure or the failure of the system on which they are installed would not have an adverse effect on any safety related system. Based upon the design criteria referenced in Design Specification CNS-1206.00-4-0001, all snubbers falling within the SLC scope are enveloped by either the QA Condition 1 or QA Condition 4 classification. The SLC scope conservatively includes all QA 1 and 4 snubbers, even though some Seismic Category II snubbers classified as QA Condition 4 potentially may be excluded due to not adversely affecting a safety related system. Any such exclusions from SLC activities will be documented on a case by case basis.
4. In keeping with good engineering practice and to provide reasonable assurance of structural reliability, any remaining snubbers not identified above (typically Non-Safety related) may be included in the program and, at a minimum, inspected or monitored periodically.

3.0 DEFINITIONS

1. **Acceptable:** A snubber that has been examined or tested, and is shown to meet examination or testing acceptance criteria.
2. **Accessible:** Snubbers that can be readily examined or tested during normal plant operations without exposing plant personnel to undue hazards or dose, or placing operating equipment at risk.
3. **Defined Test Plan Group (DTPG):** A population of snubbers selected for testing in accordance with the snubber testing sample plan.
4. **Degraded:** Any snubber that has an examination or testing parameter that is approaching, but has not exceeded the limits of the acceptance criteria.
5. **Failure Mode Group (FMG):** A group of snubbers that have failed and those other snubbers that have similar potential for similar failure.
6. **Inaccessible:** Snubbers that are located in environments which make it impractical for the snubbers to be examined under normal plant operations without exposing plant personnel to undue hazards (e.g., radiation or extreme heat) or putting plant equipment at risk.
7. **Safety-Significant Snubbers:** Snubbers designated as non-safety but determined that their failure or the failure of the system on which they are installed would have an adverse effect on any safety-related system.
8. **Service Life:** The period of time a snubber is expected to meet the operational readiness requirements without maintenance.
9. **Transient Dynamic Event:** An unexpected or potentially damaging occurrence, which was determined from reviews of operating data or during a visual inspection/examination such as a water/steam hammer, earthquake or similar event.
10. **Unacceptable:** Snubbers that do not meet examination or testing acceptance criteria.

4.0 RESPONSIBILITIES

NOTE

- The general roles and responsibilities for the execution of NGD Engineering Programs are outlined in AD-EG-ALL-1600, Engineering Programs and PD-EG-ALL-1618, Snubber Program.
- Specific activities and responsibilities for those organizations and individuals that are involved with the implementation of the Snubber Program at the CNS plant site are outlined below.

4.1 Plant Engineering Supervisor

1. Ensures that the Snubber Programs are effectively managed and implemented to meet regulatory, process, and procedure requirements.

4.2 Fleet Snubber Program Manager

1. Provides governance and oversight.
2. Provides strategic and technical direction to the Site Snubber Program Managers.
3. Develops Fleet Snubber Health Report
4. Reviews site Snubber Health reports.

4.3 Snubber Program Manager

1. Maintains qualifications in accordance with CNS training program requirements.
2. Establishes, prepares, and maintains snubber testing and examination Program Plans, implementing procedures, and schedules.
3. Assigns examination and testing requirements for snubbers, as identified in the Snubber Program Plan.
4. Maintains the IDDEAL Software Suite Database (SnubbWorks®) for snubbers.
5. Coordinates the performance of scheduled and non-scheduled snubber examination and testing activities as well as preventive maintenance and condition monitoring activities.
6. Selects and identifies snubbers for examination, testing and service life activities.
7. Reviews test and examination results for acceptability.

8. Evaluates results of examinations and tests found not meeting the acceptance criteria.
9. Generates corrective actions:
10. Action Requests (ARs)
11. Condition Reports (CRs) or Problem Investigation Program Reports (PIPs)
12. Work Requests (WRs) in support of Program activities
13. Determines the extent of additional examinations, tests, or repairs which may be required following the discovery of an unacceptable snubber condition.
14. Establishes, monitors and tracks the service life of installed snubbers through the Service Life Monitoring Program.
15. Prepares the scope lists for snubber functional testing and visual examination activities.
16. Provides pertinent information to the implementing work groups.
17. Selects the snubber populations to be examined and tested.
18. Identifies the applicable procedures required to satisfy the examination or testing requirements, per the Snubber Program Plan.
19. Submits the required snubber work scope to the On-Line work management, Outage work management, and Planning work groups.
20. Manages the scope, including content, additions, deletions, expansions and corrections of the snubber work scope.
21. Compares current recorded results with the prior or expected results to determine snubber continued service and/or corrective actions.
22. Identifies Licensing or Code requirements which cannot be achieved due to impracticality or hardship and initiates actions (Relief Request) necessary to notify the Nuclear Regulatory Commission (NRC).
23. Establishes industry contacts with ASME OM Code committee representatives, peers at other nuclear utilities, and outside consultants to ensure that the Snubber Program effectively utilizes external operating experience.
24. Reviews plant design changes and revises the Snubber Program Plan, accordingly.
25. Performs Operability/Functionality Evaluations for snubbers as required.

4.4 Plant Maintenance

1. Ensures that snubber functional testing is performed in accordance with the applicable station procedures.
2. Records the results of the snubber tests, examinations, and as-found or as-left conditions of the snubber in accordance with the appropriate station procedures.
3. Reports findings on the appropriate data sheet(s); notifying the Snubber Program Manager.
4. Repairs, rebuilds, or replaces snubbers as required under the Snubber Program.

4.5 Plant Design Engineering

1. Performs Operability/Functionality Evaluations on piping systems or components.
2. Notifies the Snubber Program Manager of plant design changes that may impact the Snubber Program.

4.6 Plant Regulatory Affairs

1. Provides licensing support of the Snubber Program.
2. Processes relief requests.
3. Submits Snubber Program Plan documents to Regulatory Authorities.

5.0 INSTRUCTIONS

5.1 General

1. For the purposes of this procedure, references to Snubber Program Manager means a (qualified) designee or other person assigned to complete any procedural requirement identified in this procedure. Snubber Program Managers shall be qualified in accordance with the applicable CNS Program Engineering requirements [ref. ISTA-1500(e)].
2. ASME OM requirements are identified and administered by the implementation of this document.
3. This document (the Snubber Program Plan) contains the overall details and implementation requirements for snubber examination, testing, and service life monitoring of snubbers. The Plan details the appropriate snubber categorization, the examination and test plan(s) required to be performed each refueling cycle, and service life monitoring of all plant installed snubbers.
4. During the ten-year interval between required program updates, the Snubber Program Plan may periodically be subject to revision. Reasons for revision include, but are not limited to:
 - a. Incorporation of Relief Requests
 - b. Incorporation of Code Cases
 - c. NRC Regulatory Guides, Notices and Bulletins
 - d. Augmented examinations
 - e. Organizational/Responsibility changes
 - f. Plant License changes
 - g. Snubber replacements
 - h. Snubber Service Life Monitoring updates
 - i. Modifications to the plant that impact the Snubber Program
5. Generation and revision to the Snubber Program Plan shall be made in accordance with applicable corporate and site processes..

5.2 Snubber Program Plan

1. Each NGD site is responsible for generation and maintenance of the site Snubber Program Plan, herein referred to as the Program.
2. The Snubber Program Plan is in accordance with AD-DC-ALL-0201, Development and Maintenance of Controlled Procedure Manual Procedures.
3. On an annual basis, and generally within 6 months of completion of a refueling outage, the Snubber Program Plan shall be revised as applicable to update pertinent information. All updates shall be documented in the Snubber Program Plan's Revision History.
4. 10-year Updates:
 - a. Once every 10 years, the Snubber Program requires updating to the edition and addenda specified in 10 CFR 50.55a.
 - b. The snubber program intervals are intended to be concurrent with the Catawba ASME Section XI 10-year intervals. The fourth Section XI interval for both units has an intended start date of 8/19/2015 at the issue date of this document, and that date is used for the snubber IST interval start date.
 - c. Snubber Program Plans for each 10-year interval shall be filed with the regulatory authorities in accordance with ASME OM requirements. Submittal shall consist of the latest revision to this document (AD-EG-CNS-1618) with cover sheet information as required by ASME OM ISTA-3200. Other pertinent articles of ASME OM include ISTA-1300, 3110, 9220, and 9230.
5. Changes to the program testing or inspection methodologies may require the Snubber Program Plan to be re-submitted to the regulatory authorities.

5.3 IDDEAL Software Suite.

1. IDDEAL Software Suite is a non-QA software program that is governed in accordance with CNS Level C per NSD 800, Software and Data Quality Assurance (SDQA) Program. IDDEAL Software is used to:
 - a. Store (as a back-up) component information, examination and testing history, and examination and testing schedules
2. Administer and implement the Inservice Inspection (ISI), Inservice Testing (IST), Snubber, and Balance of Plant (BOP) Programs

3. Snubbworks® (one of the IDDEAL applications) is a Microsoft® Access based computer program used as a tool to manage the Snubber Program information. This software program is used to organize pertinent data and records to assist with snubber examination, testing, and service life monitoring purposes.
 - a. The information contained in Snubbworks® is not QA, but can be used to produce documents or lists which, when verified, can be used as QA records.
 - b. Examination and Test reports may be generated by the SnubbWorks® software to document examination and test results.

5.4 Test and Examination Scheduling

1. Test and examination scheduling routinely coincides with refueling outages. Performing testing and examinations during refueling outages allows for improved accessibility, environmental conditions conducive for examination methods, reduced exposure (ALARA), and enhanced scheduling.
2. Examinations may be performed during plant operation (on-line) or during refueling outages, as conditions allow.
3. Functional testing for Test Plan credit at CNS is required to be performed during shutdown per SLC 16.9-13.
4. Snubber examination and testing activities at CNS are scheduled via predefined model work orders against the Equipment ID MSE HG SNUBBERS. PMID 02033094 addresses Unit 1 scope and PMID 02033095 addresses Unit 2. Attachment 1 provides information regarding definitions and scheduling of PMID work items.

5.5 Snubber Categorization

1. For Examination purposes snubbers at CNS are categorized individually as accessible or inaccessible. The categories of accessible and inaccessible snubbers are generally considered separately for examination. Alternatively, all of the snubbers may be combined together and considered as one population for examination.
 - a. A decision to examine the snubbers as one population in lieu of separate categories shall be clearly documented.
 - b. This determination may be made during or after the examination.
 - c. When recombining categories into one population, the shorter interval of the categories shall be used.
 - d. Categorization is in accordance with ASME OM ISTD-4220.

5.6 Visual Examination

1. Code Case OMN-13 shall be utilized to conduct Visual Examinations of snubbers for each unit. The Code Case allows for examinations to be conducted on an interval beyond the maximum allowed in Table ISTD-4252-1 but not to exceed 10 years for any snubber. Revision 0 of the Code Case is currently approved for use by Revision 1 of Regulatory Guide 1.192. Revisions 1 and 2 of OMN-13 are not currently approved by the Regulatory Guide, but are expected to be approved in the next RG revision. The differences between the Code Case revisions are largely editorial (cross-references between various OM code edition numbering formats), but there is one significant change where a "feedback" loop was added that reduces the 10 year interval in the event of significant unacceptable examinations occur. Although Revision 0 of the Code Case is the approved version, CNS will incorporate the feedback loop methodology as a conservative program enhancement. For the purpose of clarity the OM paragraph numbering format from OMN-13 Revision 1 is used herein to match the actual OM edition being used.
2. If at any time during an examination interval the cumulative number of unacceptable snubbers exceeds the applicable value from Column B in Table ISTD-4252-1, the current examination interval shall end, and all remaining examinations must be completed within the current fuel cycle. The duration of the subsequent examination interval shall be reduced in accordance with Table ISTD-4252-1, using the examination interval prior to implementing the Code Case as the base interval. The beginning of the subsequent fuel cycle shall be the starting date for the new examination interval.
3. As described in OMN-13 the prerequisites for utilizing the Code Case are:
 - a. Requirements of ISTD-4251 and ISTD-4252 have been satisfied with the preceding examination interval performed at the maximum interval of two fuel cycles per Table ISTD-4252-1.
 - b. Requirements of Code Case OMN-13 paragraphs 3.1 through 3.6 shall have been satisfied for one interval prior to extending the examination interval in accordance with the Code Case.

4. Verification of satisfying OMN-13 Prerequisites:

- a. During the Third ISI Interval snubbers were visually examined on the required schedule noted in SLC-16.9-13 (current at that time) and evaluated to determine their operational readiness. The SLC Visual Examination Interval table in place during the Third ISI Interval was identical to Table ISTD-4252-1. In accordance with the SLC table, the frequency of examination was determined by the total number of snubbers in the examination category and the number of unacceptable examinations recorded during the previous examination period. The maximum interval of two cycles was successfully utilized for the intervals which encompassed cycles 20/21 for Unit 1 and 18/19 for Unit 2. For Unit 1 zero snubbers were identified during the interval as being Unacceptable in accordance with the Visual Examination Acceptance Criteria. For Unit 2 only one snubber was identified as Unacceptable during the interval, which is within the Table Column B allowable limit of 5 unacceptable snubbers for a population of greater than 200 snubbers (The smallest population is Unit 2 Inaccessible snubbers which numbers greater than 250 snubbers). Therefore it is acceptable to extend the interval in accordance with OMN-13 for this prerequisite. [ASME OM ISTD-4252] (NOTE: Zero visual failures have been recorded on Unit 1 and only 1 on Unit 2 in the last 12 fuel cycles for each unit - with examinations performed every other cycle.)
- b. OMN-13 paragraph 3.1 through 3.6 requirements:
 - (1) OMN-13 paragraph 3.1 states: "Examinations per paras. ISTD-4210, ISTD-4220, ISTD-4230, and ISTD-4240 shall include examination for indications of degradation and severe operating environments." All snubber examinations were/are performed using procedures MP/0/A/7650/059, MP/0/A/7650/085, or MP/0/A/7650/095 which include such indications in the examination checklist.
 - (2) OMN-13 paragraph 3.2 states: "All snubbers shall be examined in accordance with the requirements of paras. ISTD-4210, ISTD-4220, ISTD-4230, and ISTD-4240 and para. 3.1 of this Code Case prior to conducting any maintenance, stroking, or testing, and prior to removal, for any reason, from their installed location." All snubber removal or stroking is performed using either procedure MP/0/A/7650/059 or MP/0/A/7650/095. Both procedures require the prerequisite examinations as described in the referenced paragraphs.

- (3) OMN-13 paragraph 3.3 states: "Fluid level in hydraulic snubber reservoirs shall be sufficient to ensure that the snubber is acceptable for continued service to the next examination interval." Procedures MP/0/A/7650/059, MP/0/A/7650/085, and MP/0/A/7650/095 include requirements for verifying snubber fluid levels within acceptable limits.
 - (4) OMN-13 paragraph 3.4 requires that inservice test data be evaluated for pertinent indications and anomalies indicative of progressive degradation. This evaluation is included within the Service Life Monitoring activities as described in Section 5.7 and Attachment 3 of this document (AD-EG-CNS-1618).
 - (5) OMN-13 paragraph 3.5 states: " Snubbers and snubber parts shall be examined for indications of degradation and severe operating environments during disassembly (e.g., during failure evaluation, refurbishment)." This evaluation is included within the Service Life Monitoring activities as described in Section 5.7 and Attachment 3 of this document (AD-EG-CNS-1618), as well as included in corrective actions required in accordance with Section 5.8.
 - (6) OMN-13 paragraph 3.6 states: " The service life evaluation required by para. 2.1 of this Code Case shall include any transient dynamic event and actions taken under ISTD-1750." As described in Section 5.7, 5.15, and Attachment 3 of this document (AD-EG-CNS-1618) all failures are accounted for within the scope of Service Life Monitoring activities.
5. The start date for the 10 year OMN-13 Code Case interval is conservatively set as the start date for the last series of examinations completed prior to the start of the Fourth ISI Interval. These dates are January 6, 2014 for Unit 1 (Ref. PMID# 02033094 - 7,8,9,10) and January 7, 2013 for Unit 2 (Ref. PMID# 02002033095 - 7,8,9,10). Unless the period is truncated in accordance with OMN-13, 3.7(b) all snubbers shall be examined at least once within 10 years of these dates. Should such truncation be required this document (AD-EG-CNS-1618) shall be revised to document the required inspection interval.
6. Visual Examinations are conducted using Procedure MP/0/A/7650/085 in circumstances where only an examination is required and no other work is performed.
7. Snubber removal and restoration for any reason is performed in accordance with Procedure MP/0/A/7650/059. The procedure includes requirements and criteria for Visual Examinations prior to and following hands-on work.

8. Snubber stroking (Freedom of Motion) is performed in accordance with Procedure MP/0/A/7650/095. The procedure includes requirements and criteria for Visual Examinations prior to and following hands-on work. As noted in Section 5.7 and Attachment 1 of this document (AD-EG-CNS-1618) the entire snubber population is stroked in three rotating groups, which results in the entire population being stroked at least once every five years. Since the procedure includes a Visual Examination prior to performing the stroke this activity can be used to credit towards the required Visual Examinations (which are required every ten years per OMN-13).
9. All snubbers identified during the period that do not meet the visual examination acceptance criteria shall be considered as "Unacceptable" when determining the length of the following period in accordance with Table ISTD-4242-1. This includes snubbers identified outside of the scheduled examination process.
10. Any unacceptable snubber identified shall have an evaluation performed by the Snubber Program Manager or a designated individual knowledgeable in snubber operability requirements. [ASME OM ISTD-4270 & 4280]
 - a. This evaluation shall be performed to determine the type and cause of the visual examination discrepancy and effect on the operability of the snubber and related component(s).
 - b. If the condition is determined to be generic, then additional examinations may be required, or if an isolated case, a Work Request may be issued to correct any discrepancies found.
 - c. For any snubber determined to be unacceptable or unsatisfactory, the Snubber Program Manager or designee shall initiate a CR.
11. Snubbers with unacceptable visual examination results may be evaluated by performing operational readiness testing (functional testing) in the as-found condition. Snubbers satisfying the operational readiness testing acceptance criteria may be reclassified as acceptable visual examinations. [ASME OM ISTD-4240]
12. The Visual As-Found examination shall be performed before the snubber is disconnected or removed for any reason. This examination is to determine that there are no visible indications of damage or impaired functional ability due to physical damage, leakage, corrosion, or degradation from environmental exposure or operating conditions.
13. An augmented scope is invoked whenever a visual examination is to be performed as a supplemental scope outside of the program requirements.

5.7 Service Life Monitoring

The snubber program includes a Service Life Monitoring component that addresses the following (See Attachment 5 for further explanation) [ASME OM ISTD-6000]:

1. Each installed snubber within the program scope has an estimated service life established and documented in Snubbworks®.
2. A report providing the estimated service life value of each snubber is available in the Snubbworks® software.
3. Snubber service life values shall be reviewed by the Program Manager each cycle and those snubbers that will reach end of life during the upcoming cycle are to be identified for replacement or refurbishment.
4. Previously established Service Life values for every installed snubber shall be evaluated each fuel cycle for continued applicability. Based upon the evaluation the estimated service life values may remain as previously established, reduced, or increased. The snubber listing shall be updated to reflect the evaluation results. The evaluation methodology and basis for conclusions are to be clearly documented in an outage summary CR.
 - a. For hydraulic snubbers the estimated seal life is generally the governing factor for overall service life. Seal life is based upon OEM recommendations, actual experience, or seal life studies. Currently a 25 year seal life is generically assumed for Lisega pipe snubbers, with certain exceptions as noted in the listing due to actual experience under severe conditions.
 - b. For SG snubbers a seal life of 41.6 years was established based upon a study performed on identical components at McGuire Nuclear Station (Ref. CNC-1232.00-00-0151).
 - c. For mechanical snubbers a generic service life of 40 years from the date of manufacture was initially assumed as a baseline value per initial OEM recommendations. To date this generic assumption has been validated based largely upon the condition monitoring trending performed using stroke testing per Procedure MP/0/A/7650/095. Data is insufficient to accurately predict an exact end of life, however the entire population is hand stroked over a 3-cycle period and the results evaluated to validate suitability for the next 3-cycle period. Based upon this program a generic administrative value of 60 years is used in the Ideal database for PSA mechanical snubbers, although actual acceptability is confirmed through the rolling 3 cycle evaluation. Certain snubbers in severe (high vibration) applications have previously been replaced with hydraulic snubbers, and this will continue to be the practice as applicable.
 - d. Historical data should be reviewed to identify any trends regarding service life values. Attachments 3 and 4 contain listings of past failed and significantly degraded snubbers for Units 1 and 2 respectively.
5. If the evaluation indicates that the service life of any snubber or snubbers will be exceeded before the next scheduled system or plant outage, one of the following actions shall be taken:

- a. The snubber(s) shall be replaced with a snubber for which the service life will not be exceeded before the next scheduled system or plant outage.
 - b. Technical justification shall be documented for extending the service life to or beyond the next scheduled system or plant outage.
 - c. The snubber(s) shall be reconditioned such that its service life will be extended to or beyond the next scheduled system or plant outage.
6. Prior to the beginning of each fuel cycle (startup following refueling), it shall be documented that all installed snubbers have a service life that will not be exceeded prior to either the next refuel outage or next scheduled maintenance activity for that snubber. This is documented by a signed step in Procedure PT/0/A/4200/084 (Engineering Check List for Mode Change), as well as in an outage summary Corrective Action Program document (CR). See Attachment 4 for an Outage Summary Template.

5.8 Operational Readiness Testing

1. Snubber populations within the program scope shall be tested for operational readiness during each fuel cycle. Testing will be performed in accordance with the specified sampling plan as designated in Sections 5.9 and 5.10. [ASME OM ISTD-5260]
2. Testing is required to be performed during shutdown, based upon the plant licensing requirements in SLC 16.9-13.
3. Non-Safety Related Snubbers may be tested at the discretion of the Program Manager.
4. Snubbers shall be tested in their as-found condition regarding the parameters to be tested to the fullest extent practicable.
5. Test methods shall not alter the condition of a snubber to the extent that the results do not represent the as-found snubber condition.
6. Pipe snubbers are to be removed from the field installation and bench tested in accordance with Procedure MP/0/A/7650/131.
7. Snubbers shall not be subjected to prior preventive or corrective maintenance (pre-conditioning) specifically for the purpose of meeting the applicable examination or testing requirements. Verification of freedom of motion upon snubber removal is not considered to be pre-conditioning.
8. Large Bore Steam Generator snubbers are tested by removal of control valves which are then bench tested in a surrogate snubber using Procedure SM/0/A/8100/003. Correlation of surrogate test data to actual service criteria is performed in accordance with site specifications and Original Equipment Manufacturer (OEM) recommendations.

9. Operational Readiness Test acceptance criteria is defined in Appendix H of CNS-1206.00-04-0003.
10. Snubbers that are maintained or repaired by removing or adjusting a snubber part that can affect the results of the applicable tests required by this program, shall be examined and tested in accordance with the applicable requirements before returning to service. Additionally, the applicable installation requirements shall be met. The requirements selected shall ensure that the parameters that may have been affected are verified to be acceptable by suitable examination and tests.
11. The applicable site maintenance procedures shall govern the removal and reinstallation of plant installed snubbers. Procedure MP/0/A/7650/059 is the governing procedure for all support/restraint removal/restoration activities.
12. Each snubber shall have an As-Found Visual Examination performed prior to removal activities and an As-Left Visual Examination following reinstallation in accordance with Procedure MP/0/A/7650/059.
13. Non-Safety snubber visual examination requirements shall be as directed by site Program Manager if the procedure is not utilized.
14. For each snubber determined to be unacceptable by operational readiness testing, additional snubbers shall be tested as described by ASME OM ISTD-5270. The number of additional snubbers tested is dependent upon the sample plan being utilized.
15. An evaluation of unacceptable (failed) snubbers is required and will be documented in accordance with the Corrective Action Program (CR).
16. An Engineering Evaluation shall be performed on the System, Structure, or Component (SSC) to which the unacceptable snubbers were attached.
 - a. The purpose of this Engineering Evaluation will be to determine if the SSC to which the inoperable snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the SSC remains capable of meeting the designed service.
17. For each Non-Safety Related snubber determined to be unacceptable by operational readiness testing, additional tests may be required as determined by the Program Manager. This will be performed as warranted to address extent of condition and service life concerns in accordance with the Corrective Action Program.

18. Degraded snubbers are typically replaced with new snubbers as a preventive maintenance action. Scope expansion is not required for degraded snubbers unless determined to be required for extent of condition concerns. Additional snubbers may be tested or replaced at the discretion of the Program Manager based on the cause of the degradation and the potential impact on service life assumptions. Information learned from the degraded snubbers shall be considered in the service life monitoring program as applicable.
19. Test equipment failure during functional testing may invalidate that day's testing. Failed testing equipment will be repaired or replaced. If it can be determined exactly when the failure happened, only the affected snubbers shall be retested.
20. The initial test performed for an in-service snubber test shall be maintained as the As-found test of record. If multiple tests are performed for any reason, all test results are to be saved and documented. Copies of all tests are to be included with the test procedure records along with notations as to the reason for multiple tests. The Program Manager may provide additional comments or justification as an attachment to the procedure as required.
21. Test results will be reviewed for adverse trends which will help establish the service life of specific snubbers or locations.
22. Each snubber in a parallel or multiple-snubber installation shall be identified and counted individually. Fractional sample sizes shall be rounded up to the next integer.

5.9 Defined Test Plan Group (DTPG)

1. The DTPGs shall include all Safety Related (QA Condition 1 or 4) snubbers except replacement snubbers and snubbers repaired or adjusted as a result of not meeting the acceptance requirements. These snubbers shall be exempt for the concurrent test period.
2. In accordance with ASME OM ISTD-5252 the total Safety Related snubber population is divided into DTPGs based upon type. All PSA (Pacific Scientific) mechanical snubbers make up one DTPG, Anchor Darling mechanical snubbers are a second DTPG, and all small bore Lisega pipe snubbers are a third DTPG.
3. The large bore steam generator snubbers shall be tested as a separate DTPG..

5.10 Testing Sample Plans

1. Safety Related snubbers of each DTPG shall be tested using the following sample plans as described in ASME OM ISTD:
 - a. The 10% testing sample plan is utilized for Anchor Darling, Lisega, and Steam Generator DTPGs. [ASME OM ISTD-5300]
 - b. The 37 testing sample plan is used for PSA snubbers. [ASME OM ISTD-5400]

NOTE

If the test plan selection is changed since the Plan submittal to the Regulatory Authorities, then it may be necessary that the revised Snubber Program Plan be re-submitted..

2. A test plan shall be selected for each DTPG before the scheduled testing begins.
3. The test plan selected for a DTPG shall be used throughout the refueling outage campaign for that DTPG and any Failure Mode Group (FMG) that is derived from it.
4. For unacceptable snubber(s), the additional testing shall continue in the DTPG or FMG.

5.11 Testing Sample Plan Selection

1. The initial sample selection shall be random as described in ASME OM ISTD-5311 & 5411:
2. Selection of the representative 10% Plan samples may also be selected from snubbers concurrently scheduled for seal replacement or other similar activity related to service life monitoring. The snubbers shall be tested on a generally rotational basis to coincide with the service life monitoring activity.

5.12 Sample Expansion

1. After determination that a snubber is unacceptable, an additional test plan sample shall be established. Additional test sample size shall be as required per ASME OM ISTD-5312 & 5412.
 - a. 37 Plan supplemental samples shall consist of either 18 or 19 snubbers based upon the number of unacceptable snubbers and calculated using the numerical expression in the SLC. [ASME OM ISTD-5431]
 - b. 10% Plan supplemental samples shall consist of an additional 10% of the DTPG population. [ASME OM ISTD-5331]

2. In addition to the required test plan sample expansion a Failure Mode Group (FMG) test population may be established. The unacceptable snubber(s) may be categorized into a FMG containing all unacceptable snubbers that have a given failure cause and all other snubbers evaluated to be vulnerable to the same cause. [ASME OM ISTD-5272 & 5273]

5.13 Snubber Replacement

1. Any replacement or modified snubber(s) shall have a proven suitability for the application and environment. Documentation of the suitability evaluation shall be made in the Work Order documentation and appropriate procedure sign-offs per Procedure MP/0/A/7650/059.
2. Replacement or modified snubbers shall be examined and tested before placing into service. Test results from the manufacturer for new snubbers may be utilized. Testing may be waived as documented in the appropriate installation procedure MP/0/A/7650/059.

5.14 Snubber Deletion

1. Snubbers may be deleted from the plant based on analysis of the affected piping system. When an unacceptable snubber is subsequently deleted prior to the completion of the test campaign, the deleted snubber shall nevertheless be considered in its respective examination population, examination category, or failure mode group (FMG) for determining the corrective action.
2. The number of deleted snubbers that failed or passed tests or examinations prior to being deleted will be used in determining examination or testing frequencies.

5.15 Transient Dynamic Events

1. If an unanticipated dynamic event (e.g., water hammer, steam hammer, beyond Design Basis Event (DBE), etc.) occurs that may affect snubber operability, then the affected snubbers and systems shall be reviewed and any appropriate corrective action taken. The event information, scope of review, and actions taken shall be documented in the Corrective Action Program (CR).
 - a. The Program Manager shall contact the System Engineer and/or Design Engineering to define the extent of evaluation for the affected system.
 - b. Snubbers within the affected region shall be examined, stroked, or tested as deemed appropriate to address the concern.
 - c. In many cases, the condition monitoring stroke testing that has already been planned or completed may sufficiently address the concern.

6.0 RECORDS AND REPORTS

1. Records of inspections, tests, repairs, and evaluations are maintained in the Work Order documentation. Work Orders can be searched by equipment number as well as by the PMID histories for the appropriate unit.
2. Activity summaries and records of evaluations are also documented in the Corrective Action Program (See Attachment 3 for Outage Summary Template).

7.0 REFERENCES

NOTE

The snubber program references for each applicable Plant/Unit are maintained in the site specific Snubber Program Plans.

7.1 Commitments

1. Code of Federal Regulations: 10 CFR 50.55a, Codes and Standards
2. CNS UFSAR Section 3.9.3
3. CNS Technical Specification Sections 3.0.8
4. CNS Selected Licensee Commitment SLC 16.9-13

7.2 Procedures

1. AD-DC-ALL-0201, Development and Maintenance of Controlled Procedure Manual Procedures
2. AD-EG-ALL-1000, Conduct of Engineering
3. AD-EG-ALL-1006, Conduct of Technical Program Engineering
4. AD-EG-ALL-1600, Engineering Programs
5. AD-EG-ALL-1618, Snubber Program Plan
6. PD-EG-ALL-1618, Snubber Program Description
7. ADM-NGGC-0115, Preconditioning of Structures, Systems & Components
8. ADM-NGGC-0203, Preventive Maintenance and Surveillance Testing Administration
9. CSP-NGGC-2505, Software Quality Assurance and Configuration Control of Business Computer Systems Vendor/Technical Manuals

10. NSD 800, Software and Data Quality Assurance (SDQA) Program
11. MP/0/A/7650/059, Controlling Procedure for S/R Maintenance Activities
12. MP/0/A/7650/085, Visual Examination of Snubbers
13. MP/0/A/76750/095, Post Transient Inspection (Stroke Procedure)
14. MP/0/A/7650/131, Operation of Snubber Test Machine
15. SM/0/A/8100/003, SG Snubber Examination and Testing

7.3 Miscellaneous Documents

1. ASME OM: Operation and Maintenance of Nuclear Power Plants
2. ASME Section XI Code, Rules for Inservice Inspection of Nuclear Power Plant Components
3. Regulatory Guide 1.192, Operation and Maintenance Code Case Applicability, ASME OM Code
4. Regulatory Guide 1.193, ASME Code Cases Not Approved for Use
5. INPO EPG-07, Snubbers
6. NUREG-1482, Guidelines for Inservice Testing at Nuclear Power Plants
7. CNS-1206.00-04-0001, Design Specification for Nuclear Safety Related (QA Condition 1) and QA Condition 4 Component Supports

CNS-1206.00-04-0003, Procedure Requirements for Fabrication and Erection of Hangers, Supports, and Seismic Control

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<< Predefined Model Work Order Descriptions >>

Unit 1

Innage Work Scope:

PMID 02033094-07, Visual Non-Train (Visual examination of all non-train accessible snubbers)

PMID 02033094-08, Visual A Train (Visual examination of all accessible snubbers on Train A)

PMID 02033094-09, Visual B Train (Visual examination of all accessible snubbers on Train B)

Outage Related Work Scope:

PMID 02033094-10, Visual Inaccessible (Visual examination of all inaccessible snubbers)

PMID 02033094-11, Removal and Restoration of pipe snubbers from Aux. building for testing

PMID 02033094-12, Removal and Restoration of pipe snubbers from containment for testing

PMID 02033094-13, Perform Functional Testing (Testing of all pipe snubbers on test bench)

PMID 02033094-14, Inspection of SG snubbers; Removal and Testing of control valves

PMID 02033094-15, Post-Outage FOM strokes of accessible ND system Train A snubbers

PMID 02033094-16, Post-Outage FOM strokes of accessible ND system Train B snubbers

The above models are performed every cycle, with the exception of the Visual Examinations (Tasks 07, 08, 09,10). The frequency of the visuals is dependent upon previous examination results.

Unit 2

Innage Work Scope:

PMID 02002033095-07, Visual Non-Train (Visual examination of all non-train accessible snubbers)

PMID 02033095-08, Visual A Train (Visual examination of all accessible snubbers on Train A)

PMID 02033095-09, Visual B Train (Visual examination of all accessible snubbers on Train B)

Outage Related Work Scope:

PMID 02033095-10, Visual Inaccessible (Visual examination of all inaccessible snubbers)

PMID 02033095-11, Removal and Restoration of pipe snubbers from Aux. building for testing

PMID 02033095-12, Removal and Restoration of pipe snubbers from containment for testing

PMID 02033095-13, Perform Functional Testing (Testing of all pipe snubbers on test bench)

PMID 02033095-14, Inspection of SG snubbers; Removal and Testing of control valves

PMID 02033095-15, Post-Outage FOM strokes of accessible ND system Train A snubbers

PMID 02033095-16, Post-Outage FOM strokes of accessible ND system Train B snubbers

The above models are performed every cycle, with the exception of the Visual Examinations (Tasks 07, 08, 09,10). The frequency of the visuals is dependent upon previous examination results. It is noted that the Predefined Work Orders do not identify the scope of work as related to particular snubbers and supports. Unique work orders generated from the models must have the actual scope identified by the Responsible Engineer based upon random sample plans and past history. The frequency of the Visual Inspection predefined work orders will also be updated by the Responsible Engineer as needed at each usage based the results of each inspection.

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<< Predefined Model Work Order Descriptions >>

The following model work orders address stroke testing of all snubbers not included in the above mentioned FOM models. The following models divide the remaining population into three groupings to be performed on a rotating 3-cycle basis.

Cycle A

PMID

Unit 1	Unit 2	
02033094-17	02033095-40	Outage A FOM NonTrain
02033094-18	02033095-29	Outage A FOM Train A
02033094-19	02033095-30	Outage A FOM Train B
02033094-20	02033095-31	Outage A FOM Train A/B
02033094-21	02033095-17	Innage A FOM Train A
02033094-22	02033095-18	Innage A FOM Train B
02033094-23	02033095-19	Innage A FOM Train A/B
02033094-24	02033095-20	Innage A FOM Non Train

Cycle B

PMID

Unit 1	Unit 2	
02033094-25	02033095-32	Outage B FOM Train A
02033094-26	02033095-33	Outage B FOM Train B
02033094-27	02033095-39	Outage B FOM Train A/B
02033094-28	02033095-34	Outage B FOM NonTrain
02033094-29	02033095-21	Innage B FOM Train A
02033094-30	02033095-22	Innage B FOM Train B
02033094-31	02033095-23	Innage B FOM Train A/B
02033094-32	02033095-24	Innage B FOM Non Train

Cycle C

PMID

Unit 1	Unit 2	
02033094-33	02033095-35	Outage C FOM Train A
02033094-34	02033095-36	Outage C FOM Train B
02033094-35	02033095-37	Outage C FOM Train A/B
02033094-36	02033095-38	Outage C FOM NonTrain
02033094-37	02033095-25	Innage C FOM Train A
02033094-38	02033095-26	Innage C FOM Train B
02033094-39	02033095-27	Innage C FOM Train A/B
02033094-40	02033095-28	Innage C FOM Non Train

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<< Predefined Model Work Order Descriptions >>

The following tables list the rotating FOM PMIDs associated with each innage/outage period.

Cycle/Outage #	FOM Group	PMID #
U1-15	A	02033094-21,22,23,24
<< 1EOC15 >>	A	02033094-17,18,19,20
U1-16	B	02033094-29,30,31,32
1EOC16	B	02033094-25,26,27,28
U1-17	C	02033094-37,38,39,40
1EOC17	C	02033094-33,34,35,36
U1-18	A	02033094-21,22,23,24
1EOC18	A	02033094-17,18,19,20
U1-19	B	02033094-29,30,31,32
1EOC19	B	02033094-25,26,27,28
U1-20	C	02033094-37,38,39,40
1EOC20	C	02033094-33,34,35,36
U1-21	A	02033094-21,22,23,24
1EOC21	A	02033094-17,18,19,20
U1-22	B	02033094-29,30,31,32
1EOC22	B	02033094-25,26,27,28
U1-23	C	02033094-37,38,39,40
1EOC23	C	02033094-33,34,35,36
U1-24	A	02033094-21,22,23,24
1EOC24	A	02033094-17,18,19,20
U1-25	B	02033094-29,30,31,32
1EOC25	B	02033094-25,26,27,28
U1-26	C	02033094-37,38,39,40
1EOC26	C	02033094-33,34,35,36

Cycle/Outage #	FOM Group	PMID #
U2-14	A	02033095-17,18,19,20
2EOC14	A	02033095-29,30,31,40
U2-15	B	02033095-21,22,23,24
2EOC15	B	02033095-32,33,34,39
U2-16	C	02033095-25,26,27,28
2EOC16	C	02033095-35,36,37,38
U2-17	A	02033095-17,18,19,20
2EOC17	A	02033095-29,30,31,40
U2-18	B	02033095-21,22,23,24
2EOC18	B	02033095-32,33,34,39
U2-19	C	02033095-25,26,27,28
2EOC19	C	02033095-35,36,37,38
U2-20	A	02033095-17,18,19,20
2EOC20	A	02033095-29,30,31,40
U2-21	B	02033095-21,22,23,24
2EOC21	B	02033095-32,33,34,39
U2-22	C	02033095-25,26,27,28
2EOC22	C	02033095-35,36,37,38
U2-23	A	02033095-17,18,19,20
2EOC23	A	02033095-29,30,31,40
U2-24	B	02033095-21,22,23,24
2EOC24	B	02033095-32,33,34,39
U2-25	C	02033095-25,26,27,28
2EOC25	C	02033095-35,36,37,38

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<< Typical Outage Work Process >>

Stroke Testing

Stroke testing is a Condition Monitoring activity that is performed on all installed mechanical snubbers on a defined periodic basis. Hand stroking of mechanical snubbers is an excellent method to quickly identify significantly degraded or inoperable snubbers. Based upon manufacturer recommendations it also serves to extend the service life of most mechanical snubbers by distributing internal lubricant. However, stroking does not "fix" an inoperable snubber or enhance the ability of a degraded snubber to pass a functional bench test. Since all installed mechanical snubbers undergo the same activity on the same frequency, stroking is not judged to affect the integrity of inservice sample testing - as the stroking itself is actually part of the service conditions experienced by each snubber.

Prior to the start of a Refueling Outage the Responsible Engineer will provide a list of snubbers to be stroke tested per each model work order to the Job Supervisor and planner (per outage planning milestone dates). This list is to be verified against any existing equipment list generated from the model work orders. Stroke testing consists of unpinning the individual snubber in place and manually inducing motion to verify freedom of motion. For smaller snubbers this is done by hand, while the larger models may require the use of a special tool to induce movement. The Job Supervisor coordinates with the Work Window Manager and Work Control Center to determine the best time frame to stroke each snubber, usually by system. Predefined Model work orders and tasks exist which categorize the stroke testing by operating train, system, and accessibility category. Typically the accessible train related snubbers can be stroked during the appropriate train work weeks immediately prior to the outage. Inaccessible snubbers are usually stroked as soon as possible once the outage starts. The non-train or multiple train related snubbers are generally stroked after the Unit has entered Mode 5 or in windows identified by work control. Due to issues associated with system transients during outages and start up, ND train related snubbers are generally stroked following unit re-start, depending upon ALARA concerns and dose decay rates.

Functional Testing

Functional testing on a random sample of snubbers is performed using the Barker/Diacon test bench. Currently four samples are drawn, one for PSA units, one for Anchor/Darling snubbers, one for Lisega snubbers, and one for the steam generator snubbers. 37 snubbers are selected for the PSA tests, while 10% of the others are selected.

Once the snubbers for testing are identified they are listed and supplied to the planner and outage scheduling personnel. Information provided includes location information, impacted equipment, train affected, and LCO implications. The WWM/WCC uses this information to schedule the work orders to remove individual snubbers for testing and enter into TSAIL as applicable. One work order task is written for each snubber to be removed and replaced. Functional testing requires that the subject snubber be removed from the installation location and transported to the test bench for testing.

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<< Typical Outage Work Process >>

The removal and reinstallation of the snubber is performed under one work order, while the testing itself is performed under another unique work order. In accordance with the maintenance procedure MP/0/A/7650/059 each snubber is stroked enough to verify freedom of motion immediately upon removal from the installed location. This is done to immediately identify any obvious operability concerns and is not considered to significantly affect subsequent functional test results. The MNT snubber/hanger crew performs all the physical tasks associated with the snubber testing. Assistance is provided as required by the Responsible Engineer throughout the process

Should a failure occur during testing of the initial sample an additional sample must be drawn and tested, as required per the SLC and ASME Code. Further failures result in more testing, until no more failures are observed or the entire population is tested. The Responsible Engineer is accountable for ensuring that all SLC and ASME Code requirements are satisfied.

In very rare instances it may become necessary to substitute another snubber for one that was originally identified in the sample list. One must be very careful when substituting, since it impacts the viability of the statistical sampling methodology. Substitutions should only be considered when accessing the original snubber presents a physical danger to either personnel or plant equipment, and a suitable substitute snubber is available. The substitute snubber must be a "twin" to the original. It must be shown to have been exposed to the same service conditions as the original snubber. Both snubbers should be the same design, size, and age. They must have similar time in service, environmental conditions, orientation, operating conditions, etc. The basis for the substitution must be clearly documented in both the work order documentation and in the Corrective Action Program. Corrective actions must include a plan of action to validate the reliability of the original snubber at the earliest opportunity, or to remove it from the scope of the testing program.

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<< Unit 1 Failure History >>

HNGNUMB	Sys	Serial No.	Cycle	Test Type	F/D	Comments
1-A-WG-8534	WG		1	Funct	F	Dropped
1-R-CF-1669	CF		1	FOM	F	Dropped
1-R-CF-1710	CF		1	FOM	F	Hit or stepped on
1-R-CF-1728	CF		1	FOM	F	Pitting/Corrosion
1-R-ND-0269	ND		1	FOM	F	Overload
1-R-SA-0016	SA		1	FOM	F	Transient 1-C89-026
1-R-SA-0022	SA		1	FOM	F	Transient 1-C89-026
1-R-SA-0062	SA		1	FOM	F	Transient 1-C89-026
1-R-SA-0062	SA		1	FOM	F	Transient 1-C89-026
1-A-FD-3007	FD		2	Funct	F	Installation damage
1-A-KC-3224	KC		2	Funct	F	
1-A-KC-3253	KC		2	Funct	F	
1-A-KC-3716	KC		2	Funct	F	Lubricant
1-A-KC-3725	KC		2	Funct	F	Dynamic Environment (vibration)
1-A-KC-3731	KC		2	Funct	F	
1-A-KC-3738	KC		2	Funct	F	
1-A-KC-3742	KC		2	Funct	F	Paint
1-A-KC-3744	KC		2	Funct	F	
1-A-KC-3751	KC		2	Funct	F	
1-A-KC-3757	KC		2	Funct	F	
1-A-KC-4122	KC		2	Funct	F	Paint
1-A-KC-4161	KC		2	Funct	F	Paint
1-A-KC-4955	KC		2	Funct	F	
1-A-NB-3086	NB		2	Funct	F	Manufacturing Defect
1-A-NB-3935	NB		2	Funct	F	
1-A-NB-8072	NB		2	Funct	F	
1-A-NB-8082	NB		2	Funct	F	
1-A-NC-3058	NC		2	Funct	F	
1-A-NI-4145	NI		2	Funct	F	
1-A-NI-4179	NI		2	Funct	F	
1-A-NI-4184	NI		2	Funct	F	
1-A-NI-4188	NI		2	Funct	F	Paint
1-A-NI-4219	NI		2	Funct	F	
1-A-NI-4389	NI		2	Funct	F	
1-A-NS-3040	NS		2	Funct	F	
1-A-NV-3049	NV		2	Funct	F	
1-A-VG-3086	VG		2	Funct	F	
1-A-VI-3046	VI		2	Funct	F	
1-A-WG-3357	WG		2	Funct	F	Paint
1-A-WG-8619	WG		2	Funct	F	
1-A-WP-3002	WP		2	Funct	F	
1-R-AS-0142	AS		2	Funct	F	
1-R-BB-1428	BB		2	Funct	F	

<< Unit 1 Failure History >>

HNGNUMB	Sys	Serial No.	Cycle	Test Type	F/D	Comments
1-R-BB-1439	BB		2	Funct	F	
1-R-BB-1487	BB		2	Funct	F	
1-R-BB-1506	BB		2	Funct	F	
1-R-BB-1517	BB		2	Funct	F	
1-R-BB-1520	BB		2	Funct	F	
1-R-BB-1573	BB		2	Funct	F	
1-R-BB-1710	BB		2	Funct	F	
1-R-BB-1742	BB		2	Funct	F	
1-R-BB-1835	BB		2	Funct	F	
1-R-BW-1559	BW		2	Funct	F	
1-R-CA-1665	CA		2	Funct	F	
1-R-CA-1689	CA		2	Funct	F	
1-R-CA-1697	CA		2	Funct	F	
1-R-CF-1566	CF		2	Funct	F	
1-R-CF-1669	CF		2	Funct	F	
1-R-CF-1710	CF		2	Funct	F	
1-R-CF-1731	CF		2	Funct	F	
1-R-KC-0073	KC		2	Funct	F	
1-R-KC-0649	KC		2	Funct	F	
1-R-KC-0814	KC		2	Funct	F	
1-R-KC-0829	KC		2	Funct	F	
1-R-KC-0846	KC		2	Funct	F	
1-R-KC-0848	KC		2	Funct	F	
1-R-KC-0854	KC		2	Funct	F	
1-R-LD-0074	LD		2	Funct	F	
1-R-NB-0190	NB		2	Funct	F	
1-R-NC-1224	NC		2	Funct	F	
1-R-NC-1273	NC		2	Funct	F	
1-R-NC-1312	NC		2	Funct	F	
1-R-NC-1488	NC		2	Funct	F	Paint
1-R-NC-1806	NC		2	Funct	F	
1-R-NC-2176	NC		2	Funct	F	Paint
1-R-NC-2184	NC		2	Funct	F	Paint
1-R-ND-0226	ND		2	FOM	F	Transient (overload)
1-R-ND-0265	ND		2	FOM	F	
1-R-ND-0557	ND		2	Funct	F	
1-R-ND-0596	ND		2	Funct	F	
1-R-NI-2262	NI		2	Funct	F	
1-R-NI-2353	NI		2	Funct	F	
1-R-NI-2404	NI		2	Funct	F	
1-R-NM-1081	NM		2	Funct	F	
1-R-NM-1351	NM		2	Funct	F	
1-R-NS-0115	NS		2	Funct	F	
1-R-NV-0565	NV		2	Funct	F	
1-R-NV-1007	NV		2	FOM	F	

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HNGNUMB	Sys	Serial No.	Cycle	Test Type	F/D	Comments
1-R-SM-1650	SM		2	Funct	F	
1-R-WL-1172	WL		2	Funct	F	
1-S-NR-5013	NR		2	Funct	F	
1-R-BB-1517	BB		3	Funct	F	
1-R-KC-0846	KC		3	Funct	F	
1-R-LD-0074	LD		3	Funct	F	
1-R-NC-2176	NC		3	Funct	F	
1-R-NI-2334	NI		3	FOM	F	
1-R-NS-0115	NS		3	Funct	F	
1-R-NV-0221	NV		3	FOM	F	
1-A-KC-8009	KC		4	Funct	F	Defect in gear clearances
1-A-KC-8010	KC		4	Funct	F	Defect in gear clearances
1-A-KC-8187	KC		4	Funct	F	Defect in gear clearances
1-A-KC-8194	KC		4	Funct	F	Defect in gear clearances
1-A-KC-8218	KC		4	Funct	F	Defect in gear clearances
1-A-KC-8246	KC		4	Funct	F	Defect in gear clearances
1-A-KC-8259	KC		4	Funct	F	Defect in gear clearances
1-A-NV-8312	NV		4	Funct	F	Defect in gear clearances
1-A-NV-8426	NV		4	Funct	F	Defect in gear clearances
1-A-NV-8478	NV		4	Funct	F	Defect in gear clearances
1-A-WS-8067	WS		4	Funct	F	Defect in gear clearances
1-R-KC-0803	KC		4	Funct	F	Defect in gear clearances
1-R-KC-0846	KC		4	Funct	F	
1-R-ND-0072	ND		4	Funct	F	Defect in gear clearances
1-R-ND-0226	ND		4	FOM	F	Transient (overload)
1-R-NI-2334	NI		4	FOM	F	
1-R-NS-0102	NS		4	FOM	F	
1-R-NV-1702	NV		4	Vis	F	Load pin missing
1-R-ND-0596	ND		5	FOM	F	
1-R-SM-1606	SM		5	FOM	F	Improper installation of capstan spring
1-A-NV-8115	NV		6	FOM	D	
1-R-CF-1519	CF		6	FOM	D	
1-R-CF-1726	CF		6	FOM	F	
1-R-NC-1655	NC		6	FOM	F	
1-R-ND-0391	ND		6	FOM	D	
1-R-NI-1314	NI		6	FOM	F	
1-R-NI-1384	NI		6	Funct	F	
1-R-SA-0022	SA		6	FOM	D	
1-R-SA-1503	SA		6	FOM	D	
1-R-SM-1011	SM		6	FOM	D	
1-R-SM-1545	SM		6	FOM	D	
1-R-SM-1578	SM		6	FOM	D	
1-R-SM-1650	SM		6	FOM	F	
1-R-ND-0226	ND		6	FOM	F	Transient (overload)
1-R-ND-0596	ND		6	FOM	F	

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1-R-BB-1762	BB		7	FOM	F	
1-R-BB-1827	BB		7	FOM	F	
1-R-BB-1830	BB		7	FOM	F	
1-R-CF-1502	CF		7	FOM	D	
1-R-CF-1705	CF		7	FOM	D	Pipe Clamp rotated
1-R-CF-1728	CF		7	FOM	F	
1-R-CF-1731	CF		7	FOM	D	
1-R-KC-0814	KC		7	Funct	F	
1-R-ND-0226	ND		7	FOM	F	Transient (overload)
1-R-ND-0596	ND		7	FOM	F	
1-R-ND-0624	ND		7	FOM	D	
1-R-CA-1505	CA		8	FOM	D	Spherical Bearing unstaked
1-R-CF-1003	CF		8	FOM	D	Spherical Bearing unstaked
1-R-CF-1539	CF	4786	8	FOM	D	
1-R-CF-1539	CF	4979	8	FOM	D	
1-R-CF-1544	CF	19880	8	FOM	D	
1-R-NC-1655	NC	18153	8	FOM	F	Changed to Lisega
1-A-KC-3219	KC		9	VIS	D	Misaligned clamp
1-A-KC-4228	KC		9	VIS	D	
1-A-WG-8663	WG		9	VIS	D	
1-R-CF-1517	CF		9	VIS	D	
1-R-CF-1562	CF		9	VIS	D	
1-R-LD-0085	LD	12019	9	Funct	F	Stepped on, corrosion.
1-R-NC-1071	NC		9	VIS	D	
1-R-NC-1628	NC		9	Funct	D	Arc strike
1-R-NC-1655	NC	18169	9	FOM	F	Changed to Lisega
1-R-NC-2302	NC	8868	9	Funct	D	
1-R-SM-1606	SM	322/80	9	FOM	D	
1-S-NR-5002	NR		9	VIS	D	
1-S-NR-5007	NR		9	VIS	D	Misaligned clamp
1-R-KD-0022	KD		9	FOM	D	Vibration (rough stroke)
1-R-NV-1007	NV		9	FOM	F	
1-R-SA-1530	SA		9	Vis	F	Pivot pin missing
1-A-NI-4378	NI		10	Funct	F	Shaft bent, stepped on
1-R-BB-1492	NA	7150	10	FOM	D	Spare from stock was corroded
1-R-CF-1022	CF	18220	10	FOM	D	Possibly used rebuilt parts
1-R-NC-0042	NC	7239/79	10	Funct	D	Small spikes on drag test
1-R-NV-0274	NV	12284/81	10	Funct	D	Drag > 3%, but < 5%
1-R-VN-0007	VN	17466/81	10	Funct	D	Had been water filled at some point
1-R-VN-0048	VN	9786/80	10	FOM	F	Extreme corrosion, had been water-filled.
1-R-CF-1726	CF	16357/82	11	FOM	F	Damaged by craft (twisted) during outage
1-R-KC-0038	KC	4230/78	11	Funct	D	Fretting corrosion
1-R-NV-0004	NV		11	Funct	D	Tube unstaked
1-R-SM-1590	SM	4791/79	11	Funct	D	Fretting corrosion
1-R-ND-0226	ND	40121/98	12	FOM	F	Transient (overload)

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1-A-NV-3188	NV		12	FOM	D	Fretting corrosion
1-R-CF-1562	CF		12	FOM	D	Fretting corrosion
1-R-CF-1564	CF		12	FOM	D	Fretting corrosion
1-R-ND-1191	ND		12	FOM	D	Transient
1-R-SM-1542	SM		12	FOM	D	Fretting corrosion
1-R-ND-0226	ND	3448/78	12	FOM	F	Transient (overload)
1-R-ND-0268	ND	10012/1979	12	FOM	D	Damaged by hammer strikes on tube cover
1-R-ND-0596	ND	5486/79	12	FOM	F	Transient (overload in tension)
1-R-KC-0111	KC	4199/78	13	FOM	D	Fretting corrosion
1-R-ND-0226	ND	40263/99	13	FOM	F	Transient (overload)
1-R-ND-0596	ND	17604/83	13	FOM	F	Transient (overload in tension)
1-R-SM-1680	SM		13	FOM	D	Fretting corrosion
1-R-VN-0051	VN		13	FOM	D	Rough drag(tested OK - WO 98490666)
1-R-ND-0397	ND	9800/1998	13	FOM	D	Transient
1-R-VN-0094	VN		13	FOM	D	Replaced as follow up to 1EOC12
1-A-KC-3353	KC	10671/80	14	Funct	F	Extreme corrosion, had been water-filled.
1-A-KC-4930	KC	13262/81	14	Funct	D	Boron corrosion (wo 98580366-02)
1-R-CF-1543	CF	8721/79	14	Funct	D	Internal corrosion (replace 1EOC15)
1-R-CF-1681	CF	3019/78	14	FOM	D	Rough Drag (replaced wo 98635714)
1-R-ND-0226	ND	41709/01	14	FOM	F	Transient (overload) PIP C-03-7095
1-R-ND-0596	ND		14	FOM	F	Transient (overload) PIP C-03-7095
1-R-RN-0195	RN	2828/77	14	Funct	D	Paddle end loose (replaced wo 98580367)
1-R-SM-1549	SM	12054/81	14	FOM	D	Rough drag (replaced wo 98635713)
1-R-SM-1578	SM	4987/78	14	FOM	F	Locked (replaced wo 98635803)
1-R-VN-0051	VN		14	FOM	D	Rough drag (tested OK - WO 98628388)
1-A-NV-8475	NV		15	FOM	D	Corroded, some vibration
1-A-VG-3158	VG	14192/82	15	Funct	D	Erratic Acceleration test
1-R-BB-1573	BB	10146/80	15	FOM	F	Internal corrosion (previous installation?)
1-R-NC-2227	NC	9886/80	15	Funct	D	Stroked erratic
1-R-NI-1353	NI	8707/79	15	FOM	D	Erratic acceleration test
1-R-NI-2337	NI	5512/79	15	FOM	F	High drag -replaced with Lisega
1-R-NI-2338	NI	7630/80	15	FOM	F	very high drag - replaced with Lisega
1-R-NI-2405	NI	2467/78	15	FOM	D	Hard to stroke during PM
1-R-VN-0015	VN	9788/80	15	Funct	D	Degraded drag test
1-R-CF-1562	CF	4709/78	16	Funct	D	Tension Test Load low (replaced)
1-R-ND-0226	ND		16	FOM	F	Transient (overload) PIP C-06-08283
1-R-NV-1415	NV		16	FOM	D	Rough Stroke (replaced as PM)
1-R-NV-1577	NV		16	FOM	D	Rough Stroke (replaced as PM)
1-A-NB-3513	NB		16	FOM	D	PIP C-06-05906
1-A-NB-3514	NB		16	FOM	D	PIP C-06-05906 (locks after 1/8")
1-R-KC-0811	KC		16	FOM	D	Rough stroke, PIP C-06-04983
1-R-ND-0226	ND	41725/00	16	FOM	F	Transient (overload) PIP C-05-4153
1-R-ND-0596	ND	3040000206	16	FOM	D	Paddle End Loose (PIP C-06-06104)

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1-A-NI-4147	NI	11186/79	17	FOM	F	Locked - PIP C-08-3001 (repl. w/ Lisega)
1-R-FW-0001	FW	4344/78	17	FOM	D	Submerged in trench C-08-03061
1-R-NC-1536	NC		17	FOM	D	Locks @ full ext, repl w/Lis C-08-2768
1-R-ND-0181	ND	6044/79	17	Funct	D	erratic drag, rep/lis C-08-03040
1-R-RN-0130	RN		17	FOM	D	twisted by CMP personnel C-08-3513
1-R-SB-2044	SB	12019/81	17	FOM	F	C-08-02996
1-R-SM-1542	SM	3466/78	17	FOM	D	C-08-03041
1-A-KC-8011	KC	8835/80	18	Funct	D	C-09-06872 (replace w/ Lisega)
1-A-KC-8652	KC	10107/80	18	Funct	D	C-09-06783 (replace w/ Lisega)
1-A-NI-4137	NI	7235/79	18	FOM	D	C-09-06855 (replace w/ Lisega)
1-R-NC-1633	NC		18	Funct	D	C-09-06872 (replace w/ Lisega)
1-R-NI-2404	NI	15697/82	18	Funct	D	C-09-06797 (replace w/ Lisega)
1-R-SM-1566	SM	3305/1978	18	Funct	D	replaced with new PSA 35 as PM
1-R-KC-1477	KC	5450/1978	19	FOM	F	C-11-3619; mass loose - dropped?
1-A-KC-4232	KC	3493/1978	20	FOM	D	C-12-10318 (replace w/ Lisega)
1-R-KC-0592	KC	8570/1979	20	Funct	D	C-12-10193 (replace w/ Lisega)
1-R-ND-0341	ND	9679/1980	20	Funct	D	C-12-10439 (replace w/ Lisega)
1-R-NC-1655	NC	6129706/93	21	Funct	D	Leaking, low fluid C-14-5326

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2-A-CF-4001	CF	1112	1	Funct	F	PSA 1/2	Mishandling
2-A-FW-4005	FW	12050	1	Funct	F	PSA 1/2	
2-A-KC-4167	KC	11740	1	Funct	F	PSA 1/2	
2-A-NI-4269	NI	12198	1	Funct	F	PSA 1/2	
2-A-NI-4278	NI	15358	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-A-NV-3629	NV	13822	1	Funct	F	PSA 1/2	
2-A-NV-3840	NV	12054	1	Funct	F	PSA 1/2	Mishandling
2-R-BB-1062	BB	13656	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-BB-1092	BB	15707	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-BB-1095	BB	15527	1	Funct	F	PSA 1/2	
2-R-BB-1518	BB	7219	1	Funct	F	PSA 1/2	Corrosion
2-R-BB-1527	BB	16370	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-BB-1529	BB	13723	1	Funct	F	PSA 1/2	
2-R-BB-1529	BB	12038	1	Funct	F	PSA 1/2	
2-R-BB-1529	BB	16468	1	Funct	F	PSA 1/2	
2-R-BB-1531	BB	15691	1	Funct	F	PSA 1/2	
2-R-BB-1541	BB	17423	1	Funct	F	PSA 1/2	
2-R-BB-1546	BB	14200	1	Funct	F	PSA 1/2	
2-R-BB-1547	BB	13762	1	Funct	F	PSA 1/2	
2-R-BB-1569	BB	16469	1	Funct	F	PSA 1/2	Mishandling
2-R-CA-1530	CA	14261	1	Funct	F	PSA 1/2	Insulation on cylinder
2-R-CA-1681	CA	17394	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-CF-1626	CF	16348	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-CF-1628	CF	10618	1	FOM	F	PSA 1/2	
2-R-CF-1686	CF	17493	1	Funct	F	PSA 1/2	Mishandling
2-R-CF-1706	CF	17395	1	Funct	F	PSA 1/2	Weld Spatter
2-R-FW-0039	FW	15533	1	Funct	F	PSA 1/2	
2-R-FW-0057	FW	13503	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-KD-0039	KD	15949	1	Funct	F	PSA 1/2	
2-R-LD-0003	LD	13209	1	Funct	F	PSA 1/2	
2-R-NC-1007	NC	13263	1	Funct	F	PSA 1/2	
2-R-NC-1035	NC	14811	1	Funct	F	PSA 1/2	
2-R-ND-0440	ND	15825	1	Funct	F	PSA 1/2	Mishandling
2-R-NI-1027	NI	16445	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-NI-1585	NI	13278	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-NI-1626	NI	16388	1	Funct	F	PSA 1/2	Mishandling
2-R-NI-1865	NI	11124	1	Funct	F	PSA 1/2	
2-R-NR-0011	NR	13246	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-NV-0243	NV	14252	1	Funct	F	PSA 1/2	
2-R-NV-0266	NV	13508	1	FOM	F	PSA 1/2	

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2-R-NV-1899	NV	15699	1	Funct	F	PSA 1/2	Mishandling - Twisted guide rods
2-R-SA-1503	SA	4613	1	FOM	F	PSA 1	
2-R-TE-0050	TE	14299	1	Funct	F	PSA 1/2	
2-R-YC-0048	YC	14611	1	Funct	F	PSA 1/2	Paint on cylinder
2-A-CA-4040	CA	1036	2	Funct	F	AD-70R	
2-A-NV-3629	NV	17424	2	Funct	F	PSA 1/2	
2-R-BB-1095	BB	10181	2	Funct	F	PSA 1/2	
2-R-BB-1527	BB	9905	2	Funct	F	PSA 1/2	Inadequate staking
2-R-BB-1529	BB	12051	2	Funct	F	PSA 1/2	
2-R-BB-1529	BB	15338	2	Funct	F	PSA 1/2	
2-R-BB-1531	BB	14326	2	Funct	F	PSA 1/2	
2-R-BB-1546	BB	1030	2	Funct	F	AD-70R	
2-R-BB-1547	BB	1028	2	Funct	F	AD-70R	
2-R-BB-1547	BB	1031	2	Funct	F	AD-70R	
2-R-BB-1567	BB	1038	2	Funct	F	AD-70R	
2-R-CA-1589	CA	1025	2	Funct	F	AD-70R	
2-R-CA-1592	CA	1029	2	Funct	F	AD-70R	
2-R-CA-1625	CA	1021	2	Funct	F	AD-70R	
2-R-CA-1646	CA	1018	2	Funct	F	AD-70R	
2-R-CA-1650	CA	1019	2	Funct	F	AD-70R	
2-R-CA-1660	CA	1027	2	Funct	F	AD-70R	
2-R-CA-1662	CA	1033	2	Funct	F	AD-70R	
2-R-CA-1671	CA	1032	2	Funct	F	AD-70R	
2-R-CA-1673	CA	1041	2	FOM	F	AD-70R	
2-R-CF-1628	CF	1020	2	Funct	F	AD-70R	
2-R-FW-0039	FW	1026	2	Funct	F	AD-70R	
2-R-KC-0276	KC	6421	2	Funct	F	PSA 3	
2-R-ND-0165	ND	1045	2	Funct	F	AD-70R	
2-R-ND-0195	ND		2	FOM	F	PSA 1/2	
2-R-ND-0277	ND	8043	2	FOM	F	PSA 1	
2-R-ND-0407	ND	1039	2	Funct	F	AD-70R	
2-R-NV-0266	NV	1034	2	Funct	F	AD-70R	
2-R-NV-1074	NV	13577	2	FOM	F	PSA 1/2	
2-R-SA-1503	SA		2	FOM	F	PSA 1	
2-R-SM-1721	SM		2	FOM	F	PSA 1/2	
2-R-CA-1586	CA	9447	3	Funct	F	PSA 1	
2-R-ND-0277	ND	3373	3	FOM	F	PSA 1	
2-R-ND-0326	ND	16387	3	FOM	F	PSA 1/2	Insufficient staking
2-R-SA-1503	SA	17446	3	FOM	F	PSA 1	
2-R-NC-1026	NC	12887	4	Funct	F	PSA 3	
2-R-NC-1527	NC	10047	4	Funct	F	PSA 3	
2-R-NI-1005	NI	12873	4	Funct	F	PSA 3	

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2-R-RN-0006	RN	4978	4	Funct	F	PSA 10	
2-R-SM-1553	SM		6	FOM	D	PSA 10	Loose bearing, snubber good
2-R-SM-1557	SM		6	FOM	D	PSA 10	Loose bearing, snubber good
2-R-SM-1668	SM		6	FOM	D	PSA 3	Rod eye bent, snubber good
2-R-ND-0370	ND		7	FOM	D		Anchors loose, snubber good
2-R-NV-1074	NV	13577	7	FOM	D	PSA 1/2	Rough stroke
2-R-NC-1724	NC	11956	7.5	FOM	F	PSA 10	LOOP Transient
2-R-AS-2115	AS	9778	8	FOM	F	PSA 1	Non-QA, obvious hammer load
2-R-LD-0003	LD	14673	8	FOM	D	PSA 1/2	Rough stroke, vibration induced
2-R-LD-0019	LD	16386	8	FOM	D	PSA 1/2	Rough stroke, vibration induced
2-R-NI-1872	NI	8376	8	Funct	D	PSA 1	Tests OK, end rotates (set screws)
2-R-SM-1606	SM	503	8	FOM	D	PSA 10	Rough stroke, test OK, very rusty
2-R-SM-1608	SM	11966	8	FOM	D	PSA 10	Rough stroke, High drag, rusty
2-R-VN-0010	VN	1091	8	Funct	D	PSA 1	Dent on tube, some rubbing evident
2-A-KC-3637	KC	19921	9	Funct	F	PSA 3	No lock-up, vibration failure
2-R-NV-0245	NV	9641	9	Funct	D	PSA 3	Erratic spikes, locked on 2nd test
2-R-SA-1519	SA	8483/79	9	Funct	D	PSA 3	Fretting
2-R-KC-0553	KC	17507/83	9.5	Funct	F	PSA 1/2	High drag, fretting due to vibration
2-R-CA-0132	CA	15274/82	10	Funct	D	PSA 1/2	Transient (PIP C00-1138)
2-R-NC-1704	NC	12050/81	10	Funct	D	PSA 10	
2-R-NV-0243	NV	15806/82	10	Funct	D	PSA 1/2	Fretting (PIP C00-1327)
2-R-SM-1610	SM	11939/81	10	FOM	F	PSA 10	Replace
2-A-NV-3631	NV	15885/82	11	FOM	D	PSA 1/2	Rough drag - fretting corrosion
2-R-CF-1523	CF	2585/77	11	PM	D	PSA 10	Rough stroke, test OK, very rusty
2-R-CF-1586	CF	8685/79	11	PM	D	PSA 3	Rough stroke, test OK, very rusty
2-R-NC-1707	NC	12843/80	11	Funct	D	PSA 3	Boron intrusion/corrosion
2-R-ND-0277	ND	4364/1978	11	FOM	F	PSA 1	PIP C-01-3425 (Transient)
2-R-NM-1079	NM	3341/1978	11	PM	D	PSA 1	fretting corrosion
2-R-NM-1158	NM	10144/80	11	PM	D	PSA 1/2	bent paddle end PIP C-01-5124
2-R-RN-0036	RN	8595/79	11	FOM	D	PSA 1	Paddle end unstaked - Test OK
2-R-SA-1504	SA	17527/81	11	FOM	D	PSA 1	Rough drag - High heat paddle end
2-R-SM-1537	SM		11	FOM	D	PSA 35	Paddle end unstaked - restaked
2-R-SM-1612	SM	343/1980	11	PM	D	PSA 10	WO 98265762
2-R-VN-0051	VN	8040/80	11	FOM	D	PSA 1	2EOC10 follow up (WO 98247648)
2-R-CF-1584	CF	12023/81	12	Funct	D	PSA 10	Very rusty - replaced
2-R-SM-1606	SM	566/1991	12	FOM	D	PSA 10L	Very rusty
2-R-VN-0007	VN	7201/1980	12	FOM	D	PSA 1	Loose bearing, snubber good
2-R-VN-0012	VN	2691/1980	12	FOM	D	PSA 1	Follow up test OK (WO 98577942-01)

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<< Unit 2 Failure History >>

HNGNUMB	SYSTEM	S/N	EOC	Test Type	F/D	Size	Comments
2-R-VN-0053	VN	8606/1980	12	FOM	D	PSA 1	Pipe attachment misaligned
2-R-KC-0541	KC	13993/1981	13	Funct	F	PSA 1/2	Fretting (PIP C-04-04944)
2-R-NC-1520	NC	11953/1980	13	Funct	D	PSA 3	Replace
2-R-NV-1905	NV	9845/1979	13	Funct	D	PSA 1	Replace
2-R-SM-2021	SM		13	FOM	D	PSA100L	Replace
2-R-LD-0003	LD	14404/1982	13.5	FOM	D	PSA 1/2	Rough stroke, vibration induced
2-R-VN-0053	VN	8606/1980	13.5	FOM	D	PSA 1	Rough, to be replaced later as PM
2-R-BB-1033	BB		14	FOM	D	PSA 1/2	Sticks at 1"; repl. w/lisega(C-06-2862)
2-R-CF-1002	CF	9311/1979	14	Funct	D	PSA 3	Replace w/ Lisega (C-06-2218)
2-R-KC-0541	KC	41793/2001	14	Funct	F	PSA 1/2	Fretting (PIP C-06-02557); repl. w/lisega
2-R-KD-0067	KD	5462/1978	14	Funct	D	PSA 1	Replace w/ Lisega (C-06-2161)
2-R-NC-1675	NC	10048/1979	14	Funct	D	PSA 3	Erratic drag, replace as PM
2-R-NC-1717	NC	11565/1981	14	Funct	D	PSA 10	Final drag erratic, replace w/ Lisega
2-R-ND-0277	ND	8718/1979	14	FOM	F	PSA 1	PIP C-06-02961
2-R-NV-1905	NV	41726/2000	14	Funct	D	PSA 1	Replace w/ Lisega (C-06-2219)
2-R-SA-0062	SA	16406/1982	14	Funct	D	PSA 1/2	Replace w/ Lisega (C-06-2137)
2-A-NV-3631	NV	41241/1999	14.5	FOM	D	PSA 1/2	initial stroke difficult (PIP C-07-0777)
2-R-KF-0029	KF	19746/1981	14.5	FOM	D	PSA 3	PIP C-07-3851, replace w/ Lisega
2-R-ND-0457	ND	13022/1981	14.5	FOM	F	PSA 1/2	Stroke ok for 1/2", PIP C-06-4843
2-A-NV-3840	NV	12988/1981	15	FOM	D	PSA 1/2	High drag
2-R-NR-0013	NR	9909/1980	15	Funct	D	PSA 1/2	Rough Drag, Replace as PM
2-S-NR-5524(b)	NR	12036/1980	15	Funct	F	PSA 1/2	Dropped - not service related
2-A-NI-4349	NI	15823/1982	16	FOM	F	PSA 1/2	Dropped C-09-02017
2-A-RN-3209	RN	20812/1994	16	Funct	F	PSA 1/2	CMP Improper handling C-09-01661
2-A-RN-3213	RN	20813/1994	16	Funct	F	PSA 1/2	CMP Improper handling C-09-01958
2-R-BB-1081	BB	13761/1981	16	FOM	F	PSA 1/2	Twisted PIP C-09-02073
2-R-FW-0003(a)	FW	11552/1981	16	FOM	F	PSA 10	PIP C-09-1890
2-R-FW-0003(b)	FW	11568/1981	16	FOM	F	PSA 10	PIP C-09-1890
2-R-SB-2040	SB	28201/1983	16	FOM	F	PSA 3	PIP C-09-1982
2-R-TL-2083	TL	8476/1980	16	FOM	F	PSA 1	PIP C-09-1982
2-A-CA-4040	CA	1072/1988	19	Funct	F	AD70R	PIP C-13-07911 (mishandling)
2-R-HR-2083	HR	8745/1979	19	FOM	D	PSA 3	no hand drag less than 1" C-13-8178
2-R-NI-1862	NI		19	VIS	F	PSA 1/2	unpinned C-13-08674
2-R-SB-2041	SB	25221/1982	19	FOM	D	PSA 3	hand stroke only 1/4" C-13-7971
2-R-SM-2025	SM		19	FOM	D	PSA 100	Spherical bearing cracked C-13-

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<< Unit 2 Failure History >>

HNGNUMB	SYSTEM	S/N	EOC	Test Type	F/D	Size	Comments
							8951
2-R-SM-2039	SM	42254C/2005	19	FOM	D	PSA 100	Rough. High drag C-13-8972
2-R-AS-2115	AS	40035/1998	20	FOM	F	PSA 1	Overstroked C-15-1903
2-R-BB-1546	BB	1056/1988	20	Funct	D	AD70R	Degraded bleed tension, C-15-2234
2-R-CF-1588	CF	12058/1981	20	Funct	D	PSA 10	Tube rotated after test, C-15-2237
2-R-NV-0095	NV	15553/1982	20	Funct	D	PSA 1/2	Degraded tension drag, C-15-1911

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<< Outage Summary Template >>

At the start of Outage # _____ the snubber population was as described below:

- Total number of PSA snubbers installed: _____
- Number of Safety Related PSA snubbers installed: _____
- Total number of Anchor/Darling snubbers installed: _____
- Number of Safety Related Anchor/Darling snubbers installed: _____
- Total number of Lisega pipe snubbers installed: _____
- Number of Safety Related Lisega snubbers installed: _____
- Total number of SG snubbers installed: _____
- Total number of snubbers installed: _____

Functional Test Details (TR 16.9-13 & ISTD-5000)

The Test Population consists of Safety Related snubbers only. Functional testing per ISTD-5000 requires that an initial test sample consist of the following number of snubbers relative to the Test Population:

- 37 PSA snubbers (ISTD-5400)
- 10% of Anchor/Darling = _____ snubbers (ISTD-5300)
- 10% of Lisega pipe snubbers = _____ snubbers (ISTD-5300)
- 10% of SG snubbers = _____ snubber (ISTD-5253, ISTD-5300)

The above numbers are compared to the sample snubbers listed as actually tested in Work Orders _____ and _____.

Testing pipe snubbers, WO # _____

- Number of PSA snubbers tested: _____ Failures: _____
- Number of Anchor/Darling snubbers tested: _____ Failures: _____
- Number of Lisega pipe snubbers tested: _____ Failures: _____

Testing SG snubbers, WO # _____

- Number of SG snubbers tested: _____ Failures: _____

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<< Outage Summary Template >>

Visual Examination Details (TR 16.9-13 & ISTD-4200):

- Accessible Snubbers
 - Number of Accessible snubbers: _____
 - Latest Work Orders
 - Train A WO# _____ Completed Date: _____
 - Train B WO# _____ Completed Date: _____
 - Non-train WO# _____ Completed Date: _____
 - No. of visual failures in current interval: _____
 - Previous Interval: _____ months
 - Next Interval Duration: _____ months
 - (per ASME OM Table ISTD-4252-1 and previous examination results)
 - Next due _____
- Inaccessible Snubbers
 - Number of Inaccessible snubbers: _____
 - Latest Work Order # _____ Completed Date: _____
 - No. of visual failures in current interval: _____
 - Previous Interval: _____ cycles (_____ months)
 - Next Interval Duration: _____ cycles (_____ months)
 - (per ASME OM Table ISTD-4252-1 and previous examination results)
 - Next due Outage _____

Freedom of Motion Details (TR 16.9-13 & ISTD-6000)

- Service Life Monitoring/PM Stroke Program
 - No. of snubbers stroked current outage: _____
 - No. of snubbers stroked non-outage prior to current outage: _____
 - No. of snubbers failed: _____
 - No. of snubbers degraded: _____
- Strokes due to suspected transient(s) = _____

Service Life Acceptability (TR 16.9-13 & ISTD-6200)

Service Life of Installed Snubbers has not been exceeded and will not be exceeded prior to the next scheduled surveillance.

Verified by: _____ Date: _____

Basis Comments (review of pertinent data, seal life, etc...):

Review of data indicates approximately _____% of snubbers physically worked (tests + strokes) during _____ showed indications of degradation. Actual count was _____ out of _____ snubbers worked. Including the non-outage scope the total percentage is even less. The rate for Safety Related snubbers was much less than 0.5%. This is a decreasing trend from previous cycles where 3% to 5% where degraded or replaced as PM. One third of all snubbers are stroked each cycle on a repeating 3-cycle rotation. This was the third rotation for this group of snubbers and the results indicate that this practice is improving population reliability. All results indicate that the population is acceptable for service through the next cycle.

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General Comments

Specific Snubber Functional Test Notes

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<< General Service Life Monitoring Information >>

ISTD-6200 Requirements (OM-2014 Proposal)

The service life for each location where a snubber is installed shall be reevaluated at least once each fuel cycle. Reevaluation shall be based on examination, maintenance, performance, and operating service life history data associated with representative snubbers that have been in service in the plant, as well as other information related to service life. Completion of this reevaluation shall be documented in accordance with ISTD-9300(b). Examples of methods that can be used to obtain such data are described in Nonmandatory Appendix F of this Division. Based on the results of the reevaluation, each snubber's service life shall be increased, decreased, or left unchanged.

If any snubber's reevaluated service life will be exceeded before the next scheduled system or plant outage, one of the following actions shall be taken prior to the start of the cycle:

(a) the snubber shall be replaced with a snubber for which the service life will not be exceeded before the next scheduled system or plant outage

(b) technical justification shall be documented for extending the service life to or beyond the next scheduled system or plant outage

(c) the snubber shall be reconditioned such that its service life is extended to or beyond the next scheduled system or plant outage

General Requirements

The snubber program shall include a Service Life Monitoring component that addresses the following:

1. Each installed snubber within the program scope shall have an estimated service life established and documented.
2. A listing providing the service life value of each snubber is to be maintained.
3. Snubber service life values shall be reviewed each cycle and those snubbers that will reach end of life during the upcoming cycle are to be identified for replacement or refurbishment.
4. Previously established Service Life values for every installed snubber shall be evaluated each fuel cycle for continued applicability. Based upon the evaluation the estimated service life values may remain as previously established, reduced, or increased. The snubber listing shall be updated to reflect the evaluation results. The evaluation methodology and basis for conclusions are to be clearly documented in an appropriate site process and available for retrieval and review.
5. Prior to the beginning of each fuel cycle (start up following refueling), it must be documented that all installed snubbers have a service life that will not be exceeded prior to either the next refuel outage or next scheduled maintenance activity for that snubber.

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<< General Service Life Monitoring Information >>

Implementation

1. Establishing Initial Service Life

An initial service life value should be established for each installed snubber. Historically the industry practice was for establishing the initial value was simply an estimated life based upon recommendations of the OEM (Original Equipment Manufacturer). It should be recognized that these recommended values are generally based upon ideal conditions and often used as marketing tools rather than factual experience. Some manufacturers have published revised expectations and/or added caveats regarding maintenance practices. If establishing an initial base line service life value the manufacturer's recommendations should be combined with industry and site operating experience to develop a realistic value. Application and location specific conditions should be considered to adjust the service life according to the actual operating environment of individual snubbers.

Governing parameters for service life should be clearly identified. For instance, in most cases the most critical component for the service life of a hydraulic snubber can be assumed to be the seals. The seal life as defined by the supplier will typically govern the snubber life expectancy. However, other components such as the fluid or poppet springs should be considered. For mechanical snubbers it may be that the lubricant is a governing part, or possibly a bearing or spring element - depending upon the design and application.

2. Snubber Listing

The snubber listing should provide sufficient details to readily identify the remaining service life expected for any given snubber installed in the plant. The list may be reported from a comprehensive data base or may be summary information compiled from other available program sources (record keeping spreadsheets, maintenance records, etc.). Information that should be retrievable and/or calculable for each snubber includes:

- a. Manufacture date
- b. Installation date
- c. Actual refurbishment dates (if applicable)
- d. Projected service life (expected duration)
- e. Projected date for replacement/refurbishment

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3. Scheduling Review

Data from the snubber listing shall be reviewed each cycle and all snubbers that will be due for either refurbishment or replacement during the next cycle are to be identified. This review should be completed early enough prior to the next outage to allow for proper planning and scheduling of the end of life activities. All snubbers that will reach their service life limit during the next cycle must be identified in order to complete the required actions during the outage preceding the end of life date. Accessible snubbers should also be included and reviewed to ensure that the required service life activities can be scheduled and completed during non-outage periods prior to the end of life date. It may be that operational or logistical considerations make it desirable to perform those activities during the outage even though the snubbers are accessible at power.

4. Service Life Reevaluation

Each cycle the actual expected service life values for each snubber must be reviewed and evaluated for the installed location. The purpose of this evaluation is to either validate the current established value, develop a basis to extend the service life, or to reduce the estimated service life expectancy. This is done for each and every snubber installed in the plant, and the snubber listing must be updated as appropriate. The evaluation is to be completed prior to the unit restart from the outage. Although each snubber service life must be evaluated, it is possible to use groupings of similar snubbers in similar applications to develop a basis for multiple snubbers concurrently. It is important to note that in the event the reevaluation reduces the service life of any snubber a complete extent of condition review must be performed to ensure that all other installed snubbers subject to a reduced life are adequately addressed prior to restart.

A methodology and basis for reevaluation should be developed and documented. Results of functional testing should be considered for trending. A program of periodic disassembly examinations for the purpose of evaluating service life may prove helpful. The maintenance history of each snubber should be included and utilized to evaluate the service life. When snubbers are refurbished the internal components should be inspected and evaluated for trending input. Seals that are replaced should be inspected and possibly tested to determine if the replacement interval is appropriate for the wear /aging that is actually seen. Results of preventive maintenance testing or other monitoring activities should be included in the service life reevaluation process.

5. Documentation

Prior to restart following each outage the reevaluation of service life shall be documented. The documentation should clearly state the results of the reevaluation and that all snubbers in the subject population are acceptable for the duration of the upcoming cycle (or, in the case of accessible snubbers, until their next scheduled maintenance). Reference to or discussion of the basis for this determination should be included.

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The exact form and format of this documentation depends upon site specific processes. Some examples might be: incorporation into a startup procedure, an inspection procedure sign off, a formal report, or an entry into the Corrective Action Program.

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-A-KC-3188	ADAC	AD70R	1036	480	139
1-A-KC-3253	ADAC	AD70R	998	480	139
<< 1-A-KC-3313 >>	ADAC	AD70R	1045	480	139
1-A-KC-8010	ADAC	AD70R	1019	480	139
1-A-KC-8187	ADAC	AD70R	1029	480	139
1-A-KC-8194	ADAC	AD70R	1032	480	139
1-A-KC-8218	ADAC	AD70R	991	480	139
1-A-KC-8243	ADAC	AD70R	1038	480	139
1-A-KC-8246	ADAC	AD70R	1037	480	139
1-R-CF-1744	ADAC	AD70R	993	480	139
1-R-KC-0803 (a)	ADAC	AD70R	1027	480	139
1-R-KC-0803 (b)	ADAC	AD70R	1039	480	139
2-A-CA-4040	ADAC	AD70R	1009	480	139
1-A-KC-3214	ADAC	AD70R	1067	480	151
1-A-KC-8009	ADAC	AD70R	1043	480	151
1-A-KC-8248	ADAC	AD70R	1068	480	151
1-A-KC-8259	ADAC	AD70R	1063	480	151
1-A-NV-8312	ADAC	AD70R	1051	480	151
1-A-WS-8056	ADAC	AD70R	1065	480	151
2-R-BB-1546 (a)	ADAC	AD70R	1074	480	151
2-R-BB-1546 (b)	ADAC	AD70R	990	480	151
2-R-BB-1547 (a)	ADAC	AD70R	1049	480	151
2-R-BB-1547 (b)	ADAC	AD70R	1048	480	151
2-R-BB-1547 (c)	ADAC	AD70R	1080	480	151
2-R-CA-1650	ADAC	AD70R	1073	480	151
2-R-CA-1673	ADAC	AD70R	1060	480	151
2-R-ND-0407	ADAC	AD70R	1083	480	151
2-R-NV-0266	ADAC	AD70R	1054	480	151
1-A-KC-4228	PSCO	PSA1	2420	720	259
1-A-NI-4192	PSCO	PSA1	2614	720	259
1-A-NV-3093	PSCO	PSA3	3604	720	259
1-R-CF-1544 (a)	PSCO	PSA3	3539	720	259
1-R-CF-1544 (b)	PSCO	PSA3	3549	720	259
1-R-FW-0020	PSCO	PSA3	3610	720	259

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-NC-1654	PSCO	PSA10	2217	720	259
1-R-ND-0268	PSCO	PSA3	3602	720	259
1-R-NV-1866	PSCO	PSA1	1068	720	259
1-R-NV-2153	PSCO	PSA1	1080	720	259
1-R-RN-0335 (a)	PSCO	PSA3	3135	720	259
1-R-RN-0335 (b)	PSCO	PSA3	3601	720	259
1-R-RN-0345 (b)	PSCO	PSA3	3782	720	259
1-R-RN-1013 (b)	PSCO	PSA1	2035	720	259
1-R-SC-2080 (b)	PSCO	PSA3	3608	720	259
2-A-FW-4006	PSCO	PSA1	1070	720	259
2-A-VI-3007	PSCO	PSA1	2545	720	259
2-R-CF-1586 (b)	PSCO	PSA3	3544	720	259
2-R-FW-0067 (b)	PSCO	PSA3	3597	720	259
2-R-NC-1668 (a)	PSCO	PSA3	3815	720	259
2-R-NC-1679 (b)	PSCO	PSA3	3598	720	259
2-R-NC-1682 (a)	PSCO	PSA3	2884	720	259
2-R-ND-1008	PSCO	PSA1	2073	720	259
2-R-NS-0096	PSCO	PSA3	3524	720	259
2-R-NV-1290	PSCO	PSA1	2621	720	259
2-R-RN-0360	PSCO	PSA3	3605	720	259
2-R-SC-2065(b)	PSCO	PSA10	2225	720	259
2-R-SM-1875 (a)	PSCO	PSA1	2488	720	259
1-A-FW-4001	PSCO	PSA1	3360	720	271
1-A-FW-4006	PSCO	PSA1	4424	720	271
1-A-KC-4148	PSCO	PSA1	3007	720	271
1-A-KC-4198	PSCO	PSA1	3409	720	271
1-A-KC-4248	PSCO	PSA1/2	11546	720	271
1-A-KC-4298	PSCO	PSA1	3399	720	271
1-A-NI-4189	PSCO	PSA1/2	3503	720	271
1-A-NI-4191	PSCO	PSA1	2988	720	271
1-A-VY-4113	PSCO	PSA1	4619	720	271
1-A-WL-3886	PSCO	PSA1	3405	720	271
1-R-BB-1355	PSCO	PSA1	4679	720	271
1-R-BB-1425	PSCO	PSA1	3025	720	271
1-R-BB-1490	PSCO	PSA1	4817	720	271

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-BB-1764	PSCO	PSA1	4277	720	271
1-R-BB-1774	PSCO	PSA1	4588	720	271
1-R-BB-1833	PSCO	PSA1	3480	720	271
1-R-CA-1505	PSCO	PSA1	3472	720	271
1-R-CA-1515	PSCO	PSA1	3453	720	271
1-R-CA-1591	PSCO	PSA1	3385	720	271
1-R-CF-1501	PSCO	PSA35	2633	720	271
1-R-CF-1539 (b)	PSCO	PSA10	3469	720	271
1-R-KC-0293	PSCO	PSA1	4614	720	271
1-R-KC-1116	PSCO	PSA1	4201	720	271
1-R-KC-1313	PSCO	PSA1	5447	720	271
1-R-KC-1455	PSCO	PSA1	3450	720	271
1-R-KC-1824	PSCO	PSA3	4119	720	271
1-R-NC-1129	PSCO	PSA1/2	11543	720	271
1-R-NC-1487	PSCO	PSA1/2	3984	720	271
1-R-NC-1602	PSCO	PSA10	3230	720	271
1-R-NC-1629	PSCO	PSA1	3351	720	271
1-R-NC-1646	PSCO	PSA1/2	4152	720	271
1-R-NC-1652	PSCO	PSA3	4154	720	271
1-R-ND-0250	PSCO	PSA3	4074	720	271
1-R-ND-0340	PSCO	PSA3	4152	720	271
1-R-ND-0413	PSCO	PSA1	4352	720	271
1-R-NI-1399	PSCO	PSA10	5706	720	271
1-R-NI-2313	PSCO	PSA1	4673	720	271
1-R-NI-2317	PSCO	PSA1	4417	720	271
1-R-NI-2335	PSCO	PSA1	3401	720	271
1-R-NI-2342	PSCO	PSA1	4632	720	271
1-R-NI-2382	PSCO	PSA1	3417	720	271
1-R-NS-0030	PSCO	PSA1	17576	720	271
1-R-NV-1022	PSCO	PSA1	4723	720	271
1-R-NV-1031	PSCO	PSA1	4414	720	271
1-R-NV-1365	PSCO	PSA1	3340	720	271
1-R-RN-0287	PSCO	PSA35	2553	720	271
1-R-RN-1013 (a)	PSCO	PSA1	3455	720	271
1-R-SA-0014	PSCO	PSA3	4054	720	271

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-SA-0022	PSCO	PSA1	4816	720	271
1-R-SB-2046	PSCO	PSA35	3815	720	271
1-R-SM-1015	PSCO	PSA35	3299	720	271
1-R-SM-1020	PSCO	PSA35	3319	720	271
1-R-SM-1025	PSCO	PSA35	3312	720	271
1-R-SM-1030	PSCO	PSA35	3330	720	271
1-R-SM-1553 (a)	PSCO	PSA10	4313	720	271
1-R-SM-1566 (b)	PSCO	PSA35	3345	720	271
1-R-SM-1569 (a)	PSCO	PSA10	3455	720	271
1-R-SM-1569 (b)	PSCO	PSA10	3467	720	271
1-R-SM-1579 (a)	PSCO	PSA35	2741	720	271
1-R-SM-1579 (b)	PSCO	PSA35	2757	720	271
2-A-YC-3221	PSCO	PSA1	4229	720	271
2-R-BB-1063	PSCO	PSA1	2944	720	271
2-R-CA-0218 (a)	PSCO	PSA1	4714	720	271
2-R-CF-1000	PSCO	PSA35	2565	720	271
2-R-CF-1005 (a)	PSCO	PSA3	6395	720	271
2-R-CF-1008 (b)	PSCO	PSA3	6358	720	271
2-R-CF-1564 (b)	PSCO	PSA10	4695	720	271
2-R-CF-1586 (a)	PSCO	PSA3	4052	720	271
2-R-HR-2077 (a)	PSCO	PSA3	9768	720	271
2-R-HR-2080(b)	PSCO	PSA3	6353	720	271
2-R-HR-2082	PSCO	PSA10	3213	720	271
2-R-KC-1568	PSCO	PSA1	3376	720	271
2-R-NC-1668 (b)	PSCO	PSA3	4096	720	271
2-R-NC-1676 (a)	PSCO	PSA3	5238	720	271
2-R-NC-1678 (b)	PSCO	PSA1	4257	720	271
2-R-NC-1707 (a)	PSCO	PSA3	4077	720	271
2-R-NC-1725	PSCO	PSA35	2557	720	271
2-R-ND-0260	PSCO	PSA1	2983	720	271
2-R-ND-0365	PSCO	PSA3	4083	720	271
2-R-NI-1860	PSCO	PSA1	4650	720	271
2-R-NI-1863	PSCO	PSA1	2975	720	271
2-R-NI-1867	PSCO	PSA1	3358	720	271
2-R-NV-0245	PSCO	PSA3	6394	720	271

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-SA-1519	PSCO	PSA3	4162	720	271
2-R-SA-1523	PSCO	PSA3	4057	720	271
2-R-SM-1013 (b)	PSCO	PSA10	3215	720	271
2-R-SM-1029	PSCO	PSA35	3304	720	271
2-R-SM-1035	PSCO	PSA35	3298	720	271
2-R-SM-1500	PSCO	PSA1	4712	720	271
2-R-SM-1583 (a)	PSCO	PSA10	3214	720	271
2-R-SM-1704	PSCO	PSA1	4250	720	271
2-R-SM-1875 (b)	PSCO	PSA1	4674	720	271
2-S-NR-5515 (b)	PSCO	PSA1/2	3107	720	271
2-S-NR-5519 (b)	PSCO	PSA1	4324	720	271
1-A-FW-3009	PSCO	PSA1	7122	720	283
1-A-KC-4151	PSCO	PSA1	6049	720	283
1-A-KC-4691	PSCO	PSA1/2	5662	720	283
1-A-NB-3289	PSCO	PSA1	6000	720	283
1-A-NR-3086	PSCO	PSA1	7148	720	283
1-A-NV-3000	PSCO	PSA1	8260	720	283
1-A-NV-3014	PSCO	PSA1	8604	720	283
1-A-NV-3886	PSCO	PSA1	8510	720	283
1-A-NV-8314	PSCO	PSA1	6013	720	283
1-A-NV-8379	PSCO	PSA1	9001	720	283
1-A-NV-8429	PSCO	PSA1	7179	720	283
1-A-WG-8047	PSCO	PSA1	7235	720	283
1-A-WG-8495	PSCO	PSA1/2	5517	720	283
1-A-WL-3203	PSCO	PSA1	8281	720	283
1-A-WL-3484	PSCO	PSA1	7128	720	283
1-R-BB-1501	PSCO	PSA3	9480	720	283
1-R-BB-1702	PSCO	PSA1	6131	720	283
1-R-BB-1752 (a)	PSCO	PSA1	8576	720	283
1-R-BB-1841 (a)	PSCO	PSA1	6018	720	283
1-R-BB-1842	PSCO	PSA1	6095	720	283
1-R-BW-1011	PSCO	PSA1/4	9578	720	283
1-R-CA-0287 (a)	PSCO	PSA3	8514	720	283
1-R-CA-0287 (b)	PSCO	PSA3	8500	720	283
1-R-CA-0325	PSCO	PSA3	8531	720	283

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-CF-1545 (a)	PSCO	PSA3	8721	720	283
1-R-CF-1566 (b)	PSCO	PSA3	10050	720	283
1-R-KC-0038	PSCO	PSA1	8973	720	283
1-R-KC-0572	PSCO	PSA1	7178	720	283
1-R-KC-0601	PSCO	PSA1	6017	720	283
1-R-KF-0050	PSCO	PSA1	8208	720	283
1-R-NB-0141	PSCO	PSA1	7169	720	283
1-R-NC-1056	PSCO	PSA1	8580	720	283
1-R-NC-1070	PSCO	PSA3	8785	720	283
1-R-NC-1095	PSCO	PSA1/4	8582	720	283
1-R-NC-1593	PSCO	PSA35	4835	720	283
1-R-NC-1603	PSCO	PSA35	4822	720	283
1-R-NC-1615(a)	PSCO	PSA3	10164	720	283
1-R-NC-1615(b)	PSCO	PSA3	10147	720	283
1-R-NC-1616	PSCO	PSA3	8571	720	283
1-R-NC-1618(a)	PSCO	PSA3	10247	720	283
1-R-NC-1618(b)	PSCO	PSA3	9542	720	283
1-R-NC-1624	PSCO	PSA3	8681	720	283
1-R-NC-1625(b)	PSCO	PSA3	10042	720	283
1-R-NC-1626(a)	PSCO	PSA3	8507	720	283
1-R-NC-1628	PSCO	PSA3	8501	720	283
1-R-NC-1636	PSCO	PSA3	8528	720	283
1-R-NC-1648 (a)	PSCO	PSA3	10244	720	283
1-R-NC-1648 (b)	PSCO	PSA3	9486	720	283
1-R-NC-1649 (a)	PSCO	PSA3	8562	720	283
1-R-NC-1649 (b)	PSCO	PSA3	8675	720	283
1-R-NC-1650	PSCO	PSA3	8750	720	283
1-R-NC-1656 (a)	PSCO	PSA3	10238	720	283
1-R-NC-1656 (b)	PSCO	PSA3	8567	720	283
1-R-NC-1657	PSCO	PSA3	8726	720	283
1-R-NC-2159 (a)	PSCO	PSA3	9986	720	283
1-R-NC-2208	PSCO	PSA3	8737	720	283
1-R-NC-2209 (a)	PSCO	PSA10	11571	720	283
1-R-ND-0076 (b)	PSCO	PSA1	5187	720	283
1-R-ND-0296	PSCO	PSA1	7227	720	283

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-NI-1353	PSCO	PSA3	9805	720	283
1-R-NI-2264	PSCO	PSA3	8680	720	283
1-R-NI-2315	PSCO	PSA1	8179	720	283
1-R-NI-2319	PSCO	PSA1	8571	720	283
1-R-NI-2321	PSCO	PSA1	8574	720	283
1-R-NI-2326	PSCO	PSA1	8386	720	283
1-R-NI-2327	PSCO	PSA1	7925	720	283
1-R-NI-2329	PSCO	PSA1	8559	720	283
1-R-NI-2330	PSCO	PSA1	8318	720	283
1-R-NI-2331	PSCO	PSA1	7106	720	283
1-R-NI-2341	PSCO	PSA1	8022	720	283
1-R-NS-0008	PSCO	PSA3	8520	720	283
1-R-NV-0015	PSCO	PSA1	7151	720	283
1-R-NV-0213	PSCO	PSA1	7873	720	283
1-R-NV-1002	PSCO	PSA1	7816	720	283
1-R-NV-1028	PSCO	PSA1	6111	720	283
1-R-NV-1188	PSCO	PSA10	6267	720	283
1-R-RN-0073 (a)	PSCO	PSA10	6262	720	283
1-R-RN-0139	PSCO	PSA10	6266	720	283
1-R-RN-0195	PSCO	PSA3	10248	720	283
1-R-RN-0843	PSCO	PSA3	8597	720	283
1-R-SA-0016	PSCO	PSA1	7282	720	283
1-R-SA-1529	PSCO	PSA3	8768	720	283
1-R-SM-1031	PSCO	PSA35	4669	720	283
1-R-SM-1034	PSCO	PSA35	4810	720	283
1-R-SM-1035	PSCO	PSA35	3844	720	283
1-R-SM-1549 (a)	PSCO	PSA10	5100	720	283
1-R-SM-1564 (b)	PSCO	PSA35	3898	720	283
1-R-SM-1570 (a)	PSCO	PSA10	5998	720	283
1-R-SM-1583 (a)	PSCO	PSA10	5764	720	283
1-R-SM-1713	PSCO	PSA1	8951	720	283
1-R-SV-1507	PSCO	PSA3	8614	720	283
1-R-SV-1509	PSCO	PSA3	8722	720	283
1-R-SV-1514	PSCO	PSA3	8713	720	283
1-S-NR-5017 (a)	PSCO	PSA1/2	7244	720	283

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-A-FW-4001	PSCO	PSA1	5782	720	283
2-A-KC-3637	PSCO	PSA3	8541	720	283
2-A-NV-3765	PSCO	PSA1	8028	720	283
2-A-NV-3817	PSCO	PSA1	8609	720	283
2-R-BB-1003	PSCO	PSA1	7189	720	283
2-R-BB-1036 (a)	PSCO	PSA1	8387	720	283
2-R-BB-1036 (b)	PSCO	PSA1	8557	720	283
2-R-BB-1044	PSCO	PSA1	8019	720	283
2-R-BB-1062 (b)	PSCO	PSA1/2	4371	720	283
2-R-BB-1086	PSCO	PSA3	9214	720	283
2-R-BB-1501	PSCO	PSA1	5152	720	283
2-R-BB-2180 (b)	PSCO	PSA3	9774	720	283
2-R-CA-0109	PSCO	PSA3	8506	720	283
2-R-CA-0218 (b)	PSCO	PSA1	7161	720	283
2-R-CF-1003	PSCO	PSA35	4245	720	283
2-R-CF-1005 (b)	PSCO	PSA3	8740	720	283
2-R-CF-1008 (a)	PSCO	PSA3	3808	720	283
2-R-CF-1011 (a)	PSCO	PSA3	9992	720	283
2-R-CF-1011 (b)	PSCO	PSA3	8596	720	283
2-R-CF-1526	PSCO	PSA10	5059	720	283
2-R-CF-1528	PSCO	PSA3	10142	720	283
2-R-CF-1546	PSCO	PSA3	8805	720	283
2-R-CF-1564 (a)	PSCO	PSA10	5067	720	283
2-R-CF-1584 (b)	PSCO	PSA10	6192	720	283
2-R-CF-1644	PSCO	PSA1/2	5443	720	283
2-R-CF-1727 (a)	PSCO	PSA1	8539	720	283
2-R-CF-1727 (b)	PSCO	PSA1	8235	720	283
2-R-CF-1728 (a)	PSCO	PSA1	5784	720	283
2-R-CF-1728 (b)	PSCO	PSA1	5967	720	283
2-R-FW-0067 (a)	PSCO	PSA3	8109	720	283
2-R-FW-0089	PSCO	PSA3	9498	720	283
2-R-FW-0115	PSCO	PSA3	9934	720	283
2-R-HR-2067(a)	PSCO	PSA3	9759	720	283
2-R-HR-2071	PSCO	PSA3	8747	720	283
2-R-HR-2077 (b)	PSCO	PSA3	8587	720	283

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-HR-2080(a)	PSCO	PSA3	8855	720	283
2-R-KC-0196	PSCO	PSA3	8211	720	283
2-R-KC-0227 (a)	PSCO	PSA3	10206	720	283
2-R-KC-0227 (b)	PSCO	PSA3	9488	720	283
2-R-KC-0437	PSCO	PSA3	8953	720	283
2-R-NC-1038	PSCO	PSA1	8075	720	283
2-R-NC-1500	PSCO	PSA10	4790	720	283
2-R-NC-1509	PSCO	PSA3	10236	720	283
2-R-NC-1518	PSCO	PSA3	9938	720	283
2-R-NC-1669	PSCO	PSA3	9826	720	283
2-R-NC-1670 (a)	PSCO	PSA3	9472	720	283
2-R-NC-1670 (b)	PSCO	PSA1	7906	720	283
2-R-NC-1671 (b)	PSCO	PSA3	9561	720	283
2-R-NC-1673 (a)	PSCO	PSA3	8744	720	283
2-R-NC-1675 (a)	PSCO	PSA3	12870	720	283
2-R-NC-1675 (b)	PSCO	PSA3	10048	720	283
2-R-NC-1676 (b)	PSCO	PSA3	8688	720	283
2-R-NC-1678 (a)	PSCO	PSA1	5777	720	283
2-R-NC-1679 (a)	PSCO	PSA3	9960	720	283
2-R-NC-1681 (a)	PSCO	PSA10	5083	720	283
2-R-NC-1684 (b)	PSCO	PSA10	6361	720	283
2-R-NC-1685	PSCO	PSA3	7202	720	283
2-R-NC-1698 (a)	PSCO	PSA3	8798	720	283
2-R-NC-1698 (b)	PSCO	PSA3	9211	720	283
2-R-NC-1703	PSCO	PSA3	6359	720	283
2-R-NC-1707 (b)	PSCO	PSA3	9503	720	283
2-R-NC-1919	PSCO	PSA1	8251	720	283
2-R-ND-0256	PSCO	PSA3	8718	720	283
2-R-ND-0265 (a)	PSCO	PSA1	8486	720	283
2-R-ND-0265 (b)	PSCO	PSA1	8463	720	283
2-R-ND-0273	PSCO	PSA1	9056	720	283
2-R-ND-0456	PSCO	PSA1	8170	720	283
2-R-ND-0457 (b)	PSCO	PSA1	8257	720	283
2-R-ND-0467	PSCO	PSA1	8368	720	283
2-R-NI-1043	PSCO	PSA3	10084	720	283

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-NI-1694	PSCO	PSA3	7332	720	283
2-R-NI-1758 (b)	PSCO	PSA10	6018	720	283
2-R-NI-1816 (a)	PSCO	PSA1	9068	720	283
2-R-NI-1816 (b)	PSCO	PSA1	8279	720	283
2-R-NI-1850	PSCO	PSA1/2	7218	720	283
2-R-NI-1851	PSCO	PSA1	8943	720	283
2-R-NI-1855	PSCO	PSA1/4	10195	720	283
2-R-NI-1856	PSCO	PSA1	5121	720	283
2-R-NI-1859	PSCO	PSA1	7333	720	283
2-R-NI-1864	PSCO	PSA1	7216	720	283
2-R-NI-1872	PSCO	PSA1	8612	720	283
2-R-NR-0015	PSCO	PSA1/2	4970	720	283
2-R-NV-0323	PSCO	PSA1	8937	720	283
2-R-NV-1163	PSCO	PSA1	8497	720	283
2-R-NV-1164	PSCO	PSA1	8213	720	283
2-R-NV-1386	PSCO	PSA1	7170	720	283
2-R-NV-1687	PSCO	PSA1/2	6344	720	283
2-R-NV-1987	PSCO	PSA1	8391	720	283
2-R-RN-0039	PSCO	PSA3	8618	720	283
2-R-RN-0079	PSCO	PSA3	9639	720	283
2-R-SM-1001	PSCO	PSA35	4831	720	283
2-R-SM-1005	PSCO	PSA35	3802	720	283
2-R-SM-1011	PSCO	PSA35	4806	720	283
2-R-SM-1013 (a)	PSCO	PSA10	6282	720	283
2-R-SM-1021	PSCO	PSA35	3847	720	283
2-R-SM-1024	PSCO	PSA35	4817	720	283
2-R-SM-1030	PSCO	PSA35	3829	720	283
2-R-SM-1031	PSCO	PSA35	3859	720	283
2-R-SM-1502	PSCO	PSA1	8337	720	283
2-R-SM-1553 (b)	PSCO	PSA10	6211	720	283
2-R-SM-1569 (a)	PSCO	PSA10	5955	720	283
2-R-SM-1570 (b)	PSCO	PSA10	6197	720	283
2-R-SM-1579 (a)	PSCO	PSA10	6295	720	283
2-R-SM-1582 (a)	PSCO	PSA10	6204	720	283
2-R-SM-1583 (b)	PSCO	PSA10	6261	720	283

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-SM-1629	PSCO	PSA1	8008	720	283
2-R-SM-1654	PSCO	PSA1	8271	720	283
2-R-SM-1716	PSCO	PSA1	8568	720	283
2-R-SV-1548	PSCO	PSA1	8276	720	283
2-R-SV-1570	PSCO	PSA3	8611	720	283
2-R-TE-0025 (b)	PSCO	PSA1	9053	720	283
2-R-TL-2082	PSCO	PSA3	9856	720	283
2-R-YC-0007 (b)	PSCO	PSA1	8329	720	283
2-R-YC-0023 (a)	PSCO	PSA1	7329	720	283
2-R-YC-0023 (b)	PSCO	PSA1	7153	720	283
2-S-NR-5519 (a)	PSCO	PSA1	9069	720	283
1-A-CA-4016	PSCO	PSA1	17448	720	295
1-A-CF-4021	PSCO	PSA1	4597	720	295
1-A-CF-4023	PSCO	PSA1/2	13571	720	295
1-A-FW-3033	PSCO	PSA1	5978	720	295
1-A-GS-3188	PSCO	PSA1/2	10621	720	295
1-A-KC-3219	PSCO	PSA1	5973	720	295
1-A-KC-3224	PSCO	PSA1/2	13766	720	295
1-A-KC-3276	PSCO	PSA1	4334	720	295
1-A-KC-3278	PSCO	PSA3	4168	720	295
1-A-KC-3345	PSCO	PSA1	11776	720	295
1-A-KC-3393	PSCO	PSA1	8291	720	295
1-A-KC-3424	PSCO	PSA1	4572	720	295
1-A-KC-3487	PSCO	PSA1	5169	720	295
1-A-KC-3533	PSCO	PSA1	9280	720	295
1-A-KC-3554	PSCO	PSA1/2	10602	720	295
1-A-KC-3601	PSCO	PSA1/2	9911	720	295
1-A-KC-4307	PSCO	PSA1	7931	720	295
1-A-KC-8020	PSCO	PSA1	9948	720	295
1-A-KC-8146	PSCO	PSA1/2	10807	720	295
1-A-KC-8201	PSCO	PSA1/2	11166	720	295
1-A-KC-8204	PSCO	PSA1/2	7661	720	295
1-A-KC-8217	PSCO	PSA1/2	10043	720	295
1-A-KC-8251	PSCO	PSA1/2	16429	720	295
1-A-KC-8400	PSCO	PSA1/2	13519	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-A-KC-8406	PSCO	PSA1/2	16425	720	295
1-A-KC-8549	PSCO	PSA1/2	13669	720	295
1-A-KF-3053	PSCO	PSA1/2	10634	720	295
1-A-NB-3179	PSCO	PSA1/2	13211	720	295
1-A-NB-3244	PSCO	PSA1/2	12981	720	295
1-A-NB-3246	PSCO	PSA1/2	11185	720	295
1-A-NB-3382	PSCO	PSA1	9248	720	295
1-A-NB-3458	PSCO	PSA1	9292	720	295
1-A-NB-3518	PSCO	PSA1/2	11774	720	295
1-A-NB-3670	PSCO	PSA1	8440	720	295
1-A-NB-3781	PSCO	PSA1/2	14297	720	295
1-A-NB-3789	PSCO	PSA1/2	4398	720	295
1-A-NB-8020	PSCO	PSA1/2	10683	720	295
1-A-NB-8056	PSCO	PSA1	9254	720	295
1-A-NB-8141	PSCO	PSA1/2	8831	720	295
1-A-NB-8156	PSCO	PSA1	8176	720	295
1-A-NB-8166	PSCO	PSA1	6037	720	295
1-A-NB-8183	PSCO	PSA1/2	13877	720	295
1-A-NB-8284	PSCO	PSA1/2	11765	720	295
1-A-NB-8402	PSCO	PSA1/2	12020	720	295
1-A-NB-8448	PSCO	PSA1/2	10029	720	295
1-A-NC-3054	PSCO	PSA1/2	14646	720	295
1-A-NC-3058	PSCO	PSA1/2	14229	720	295
1-A-NF-3009	PSCO	PSA3	19864	720	295
1-A-NI-4008	PSCO	PSA1/2	10056	720	295
1-A-NI-4116	PSCO	PSA1/2	8031	720	295
1-A-NI-4217	PSCO	PSA1/2	14073	720	295
1-A-NI-4370	PSCO	PSA1/2	8052	720	295
1-A-NR-3097	PSCO	PSA1/2	4760	720	295
1-A-NR-3222	PSCO	PSA1	8219	720	295
1-A-NV-3006	PSCO	PSA1	12426	720	295
1-A-NV-3008	PSCO	PSA1	8584	720	295
1-A-NV-3026	PSCO	PSA1	6079	720	295
1-A-NV-3036	PSCO	PSA1	12903	720	295
1-A-NV-3045	PSCO	PSA1	12347	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-A-NV-3049	PSCO	PSA1	17237	720	295
1-A-NV-3075	PSCO	PSA1	9310	720	295
1-A-NV-3134	PSCO	PSA1	9637	720	295
1-A-NV-3188	PSCO	PSA3	9645	720	295
1-A-NV-3286	PSCO	PSA1/2	10120	720	295
1-A-NV-3289	PSCO	PSA1	7346	720	295
1-A-NV-3299	PSCO	PSA1	8074	720	295
1-A-NV-3315	PSCO	PSA1	9264	720	295
1-A-NV-3711	PSCO	PSA1/2	10071	720	295
1-A-NV-3745	PSCO	PSA1/2	14617	720	295
1-A-NV-3751	PSCO	PSA1/2	11764	720	295
1-A-NV-3802	PSCO	PSA1	9029	720	295
1-A-NV-3831	PSCO	PSA1/2	13221	720	295
1-A-NV-3875	PSCO	PSA1/2	14857	720	295
1-A-NV-3975	PSCO	PSA1/2	41243	720	295
1-A-NV-4043	PSCO	PSA1/2	17404	720	295
1-A-NV-8018	PSCO	PSA1	9483	720	295
1-A-NV-8096	PSCO	PSA1	2891	720	295
1-A-NV-8115	PSCO	PSA1	8843	720	295
1-A-NV-8123	PSCO	PSA1/2	15574	720	295
1-A-NV-8125	PSCO	PSA1/2	14946	720	295
1-A-NV-8132	PSCO	PSA1/2	8858x	720	295
1-A-NV-8161	PSCO	PSA1/2	13350	720	295
1-A-NV-8163	PSCO	PSA1/2	11127	720	295
1-A-NV-8168	PSCO	PSA1	8353	720	295
1-A-NV-8192	PSCO	PSA1	9271	720	295
1-A-NV-8210 (a)	PSCO	PSA1/2	12987	720	295
1-A-NV-8210 (b)	PSCO	PSA1/2	13003	720	295
1-A-NV-8224	PSCO	PSA1	9250	720	295
1-A-NV-8238	PSCO	PSA1	7260	720	295
1-A-NV-8306	PSCO	PSA1/2	9900	720	295
1-A-NV-8313	PSCO	PSA1	12916	720	295
1-A-NV-8316	PSCO	PSA1	6028	720	295
1-A-NV-8325	PSCO	PSA3	3633	720	295
1-A-NV-8331	PSCO	PSA1/2	16408	720	295

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1-A-NV-8352	PSCO	PSA1/2	10597	720	295
1-A-NV-8370	PSCO	PSA1	9641	720	295
1-A-NV-8375	PSCO	PSA1/2	7208	720	295
1-A-NV-8406	PSCO	PSA1	12909	720	295
1-A-NV-8411 (a)	PSCO	PSA1/2	15548	720	295
1-A-NV-8411 (b)	PSCO	PSA1/2	10068	720	295
1-A-NV-8413	PSCO	PSA1/2	16441	720	295
1-A-NV-8505	PSCO	PSA1/2	18696	720	295
1-A-NV-8507	PSCO	PSA1/2	7228	720	295
1-A-NV-8511	PSCO	PSA1/2	14082	720	295
1-A-NV-8518	PSCO	PSA1	8377	720	295
1-A-NV-8552	PSCO	PSA1	6069	720	295
1-A-NV-8562	PSCO	PSA1/2	13672	720	295
1-A-VB-3047	PSCO	PSA1/2	16356	720	295
1-A-VB-3052	PSCO	PSA1/2	10085	720	295
1-A-VI-3055	PSCO	PSA1/2	9919	720	295
1-A-VI-4117	PSCO	PSA1/2	13999	720	295
1-A-WG-3024	PSCO	PSA1/2	10668	720	295
1-A-WG-3224	PSCO	PSA1/2	13782	720	295
1-A-WG-3666	PSCO	PSA1/2	13007	720	295
1-A-WG-3771	PSCO	PSA1	7284	720	295
1-A-WG-8161	PSCO	PSA1/2	15817	720	295
1-A-WG-8435	PSCO	PSA1/2	6373	720	295
1-A-WG-8565	PSCO	PSA1/2	15360	720	295
1-A-WG-8567	PSCO	PSA1/2	11769	720	295
1-A-WG-8572	PSCO	PSA1/2	12009	720	295
1-A-WG-8610	PSCO	PSA1/2	13626	720	295
1-A-WG-8619	PSCO	PSA1/2	13996	720	295
1-A-WG-8628 (b)	PSCO	PSA1/2	13554	720	295
1-A-WG-8642	PSCO	PSA1/2	13646	720	295
1-A-WG-8694	PSCO	PSA1/2	12255	720	295
1-A-WL-3193	PSCO	PSA1	8944	720	295
1-A-WL-3199	PSCO	PSA1	9276	720	295
1-A-WL-3200	PSCO	PSA1	9297	720	295
1-A-WL-3201	PSCO	PSA1	17544	720	295

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1-A-WL-3209	PSCO	PSA1	8243	720	295
1-A-WL-3212	PSCO	PSA1	9678	720	295
1-A-WL-3218	PSCO	PSA1	8226	720	295
1-A-WL-3326	PSCO	PSA1/2	8065	720	295
1-A-WL-3532	PSCO	PSA1	9795	720	295
1-A-WL-3533	PSCO	PSA1/2	11782	720	295
1-A-WL-3579	PSCO	PSA1	16414	720	295
1-A-WL-3643	PSCO	PSA1/2	16460	720	295
1-A-WL-3764	PSCO	PSA1/2	14606	720	295
1-A-WL-3887	PSCO	PSA1	8210	720	295
1-A-WL-4056	PSCO	PSA1	17513	720	295
1-A-WL-8145	PSCO	PSA1/2	12089	720	295
1-A-WL-8146	PSCO	PSA1/2	11780	720	295
1-A-WP-3002	PSCO	PSA1/2	13552	720	295
1-A-YC-3347	PSCO	PSA1	17516	720	295
1-A-YC-3387	PSCO	PSA1/2	92551	720	295
1-A-YC-3406	PSCO	PSA1/2	6058	720	295
1-A-YM-3150	PSCO	PSA1/2	13659	720	295
1-A-YM-3210	PSCO	PSA1/2	13331	720	295
1-R-AS-2228	PSCO	PSA1	5439	720	295
1-R-BB-1346	PSCO	PSA1	12932	720	295
1-R-BB-1411	PSCO	PSA1/2	11772	720	295
1-R-BB-1413	PSCO	PSA1	2946	720	295
1-R-BB-1419	PSCO	PSA1	9260	720	295
1-R-BB-1520	PSCO	PSA1	26161	720	295
1-R-BB-1575	PSCO	PSA1/2	14012	720	295
1-R-BB-1584	PSCO	PSA1/2	28155	720	295
1-R-BB-1587	PSCO	PSA1/2	13041	720	295
1-R-BB-1589	PSCO	PSA1/2	15843	720	295
1-R-BB-1590	PSCO	PSA1/2	15757	720	295
1-R-BB-1822	PSCO	PSA1	9269	720	295
1-R-BB-1837	PSCO	PSA1	9478	720	295
1-R-BB-2284 (a)	PSCO	PSA3	9584	720	295
1-R-BB-2284 (b)	PSCO	PSA3	10229	720	295
1-R-BW-1010	PSCO	PSA1/4	12952	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-CA-1615	PSCO	PSA1	8468	720	295
1-R-CA-1679	PSCO	PSA1	2974	720	295
1-R-CA-1680	PSCO	PSA1	7322	720	295
1-R-CA-1686 (a)	PSCO	PSA1	6105	720	295
1-R-CA-1686 (b)	PSCO	PSA1	473	720	295
1-R-CA-1704	PSCO	PSA1/2	15976	720	295
1-R-CF-1502 (a)	PSCO	PSA10	9459	720	295
1-R-CF-1502 (b)	PSCO	PSA10	8155	720	295
1-R-CF-1520	PSCO	PSA35	4318	720	295
1-R-CF-1539 (a)	PSCO	PSA10	18172	720	295
1-R-CF-1541 (a)	PSCO	PSA10	5049	720	295
1-R-CF-1541 (b)	PSCO	PSA10	3219	720	295
1-R-CF-1543 (b)	PSCO	PSA3	8733	720	295
1-R-CF-1545 (b)	PSCO	PSA3	8734	720	295
1-R-CF-1564 (a)	PSCO	PSA10	12629	720	295
1-R-CF-1564 (b)	PSCO	PSA10	5868	720	295
1-R-CF-1566 (a)	PSCO	PSA3	28196	720	295
1-R-CF-1567 (a)	PSCO	PSA3	8825	720	295
1-R-CF-1567 (b)	PSCO	PSA3	11152	720	295
1-R-CF-1568 (b)	PSCO	PSA10	11561	720	295
1-R-CF-1591 (a)	PSCO	PSA1	349	720	295
1-R-CF-1591 (b)	PSCO	PSA1	390	720	295
1-R-CF-1611	PSCO	PSA1/2	15819	720	295
1-R-CF-1670 (b)	PSCO	PSA1	17450	720	295
1-R-CF-1733	PSCO	PSA1	1088	720	295
1-R-FW-0008 (a)	PSCO	PSA3	4076	720	295
1-R-FW-0008 (b)	PSCO	PSA3	4048	720	295
1-R-FW-0045	PSCO	PSA1	6102	720	295
1-R-FW-0056	PSCO	PSA3	6408	720	295
1-R-FW-0132 (a)	PSCO	PSA3	2541	720	295
1-R-FW-0132 (b)	PSCO	PSA3	3531	720	295
1-R-GN-1510	PSCO	PSA1	6075	720	295
1-R-HR-2026 (a)	PSCO	PSA3	19936	720	295
1-R-HR-2026 (b)	PSCO	PSA3	19906	720	295
1-R-HR-2045	PSCO	PSA3	4174	720	295

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1-R-HR-2065	PSCO	PSA3	3533	720	295
1-R-HR-2070	PSCO	PSA3	3590	720	295
1-R-HR-2075 (a)	PSCO	PSA3	25194	720	295
1-R-HR-2075 (b)	PSCO	PSA3	9762	720	295
1-R-HR-2076	PSCO	PSA3	6657	720	295
1-R-HR-2077	PSCO	PSA1	3353	720	295
1-R-HR-2078	PSCO	PSA3	19868	720	295
1-R-HR-2079	PSCO	PSA3	19895	720	295
1-R-HR-2080 (a)	PSCO	PSA3	19970	720	295
1-R-HR-2080 (b)	PSCO	PSA3	8098	720	295
1-R-HR-2081	PSCO	PSA1	7799	720	295
1-R-HR-2082	PSCO	PSA3	25120	720	295
1-R-HR-2083	PSCO	PSA3	19782	720	295
1-R-HR-2084 (a)	PSCO	PSA3	8810	720	295
1-R-HR-2084 (b)	PSCO	PSA3	9957	720	295
1-R-HR-2085	PSCO	PSA10	6583	720	295
1-R-HR-2086	PSCO	PSA3	8602	720	295
1-R-HR-2088	PSCO	PSA10	12060	720	295
1-R-HR-2089	PSCO	PSA3	9769	720	295
1-R-HR-2090	PSCO	PSA3	11166	720	295
1-R-KC-0004	PSCO	PSA1	17312	720	295
1-R-KC-0111	PSCO	PSA1	4199	720	295
1-R-KC-0124	PSCO	PSA1	12906	720	295
1-R-KC-0273	PSCO	PSA1	9279	720	295
1-R-KC-0275	PSCO	PSA1	9300	720	295
1-R-KC-0303	PSCO	PSA3	3546	720	295
1-R-KC-0317 (a)	PSCO	PSA1	9791	720	295
1-R-KC-0317 (b)	PSCO	PSA1	9838	720	295
1-R-KC-0392	PSCO	PSA10	5038	720	295
1-R-KC-0394	PSCO	PSA35	2575	720	295
1-R-KC-0398	PSCO	PSA3	11142	720	295
1-R-KC-0444	PSCO	PSA3	9557	720	295
1-R-KC-0458	PSCO	PSA3	6386	720	295
1-R-KC-0524	PSCO	PSA1	4728	720	295
1-R-KC-0606	PSCO	PSA1/2	11126	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-KC-0647	PSCO	PSA1/2	11130	720	295
1-R-KC-0649	PSCO	PSA1/2	10054	720	295
1-R-KC-0700	PSCO	PSA1	5431	720	295
1-R-KC-1030	PSCO	PSA1	17556	720	295
1-R-KC-1436	PSCO	PSA1/2	11559	720	295
1-R-KC-1807	PSCO	PSA3	11055	720	295
1-R-KC-1808	PSCO	PSA3	4157	720	295
1-R-KD-0121	PSCO	PSA1	9959	720	295
1-R-KF-0031	PSCO	PSA1	12382	720	295
1-R-KF-0037	PSCO	PSA3	19848	720	295
1-R-KF-0056	PSCO	PSA1	1098	720	295
1-R-NB-0190	PSCO	PSA1/2	11122	720	295
1-R-NB-0199	PSCO	PSA1	8439	720	295
1-R-NC-0043	PSCO	PSA1/2	8851	720	295
1-R-NC-1062	PSCO	PSA1	10155	720	295
1-R-NC-1064	PSCO	PSA1	10138	720	295
1-R-NC-1075	PSCO	PSA1	9626	720	295
1-R-NC-1622(a)	PSCO	PSA3	12748	720	295
1-R-NC-1622(b)	PSCO	PSA3	10212	720	295
1-R-NC-1625(a)	PSCO	PSA3	12880	720	295
1-R-NC-1626(b)	PSCO	PSA3	8535	720	295
1-R-NC-1631(a)	PSCO	PSA1	17528	720	295
1-R-NC-1631(b)	PSCO	PSA1	17536	720	295
1-R-NC-1635	PSCO	PSA3	12736	720	295
1-R-NC-1651	PSCO	PSA10	6931	720	295
1-R-NC-1724	PSCO	PSA1/2	11530	720	295
1-R-NC-1812	PSCO	PSA1/4	12030	720	295
1-R-NC-2157 (a)	PSCO	PSA3	12858	720	295
1-R-NC-2157 (b)	PSCO	PSA3	12734	720	295
1-R-NC-2159 (b)	PSCO	PSA3	11727	720	295
1-R-NC-2201	PSCO	PSA3	10251	720	295
1-R-NC-2237	PSCO	PSA1/2	9851	720	295
1-R-NC-2243	PSCO	PSA1	361	720	295
1-R-ND-0076 (a)	PSCO	PSA1	5149	720	295
1-R-ND-0108	PSCO	PSA1	5244	720	295

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1-R-ND-0225	PSCO	PSA3	11049	720	295
1-R-ND-0299 (a)	PSCO	PSA1	9668	720	295
1-R-ND-0299 (b)	PSCO	PSA1	9268	720	295
1-R-ND-0328	PSCO	PSA1	5990	720	295
1-R-ND-0330	PSCO	PSA1	12380	720	295
1-R-ND-0378	PSCO	PSA3	3528	720	295
1-R-ND-0386	PSCO	PSA1	9294	720	295
1-R-ND-0405	PSCO	PSA1	8252	720	295
1-R-ND-0576	PSCO	PSA1	2088	720	295
1-R-ND-0622	PSCO	PSA1/2	13662	720	295
1-R-ND-0624	PSCO	PSA1/2	14237	720	295
1-R-ND-1005	PSCO	PSA3	8045	720	295
1-R-ND-1007	PSCO	PSA1	5787	720	295
1-R-ND-1027	PSCO	PSA3	11708	720	295
1-R-NI-0012	PSCO	PSA1	9273	720	295
1-R-NI-0109	PSCO	PSA1	4596	720	295
1-R-NI-0174	PSCO	PSA1/2	14604	720	295
1-R-NI-1071	PSCO	PSA1/2	15940	720	295
1-R-NI-1219	PSCO	PSA35	5703	720	295
1-R-NI-1396 (a)	PSCO	PSA3	12728	720	295
1-R-NI-1396 (b)	PSCO	PSA3	12862	720	295
1-R-NI-2325	PSCO	PSA1/2	8120	720	295
1-R-NR-0022	PSCO	PSA1/2	15334	720	295
1-R-NS-0031	PSCO	PSA1	17302	720	295
1-R-NV-0082	PSCO	PSA1	7195	720	295
1-R-NV-0275	PSCO	PSA1	7335	720	295
1-R-NV-0471	PSCO	PSA1/2	9888	720	295
1-R-NV-0508	PSCO	PSA1	6083	720	295
1-R-NV-1012 (a)	PSCO	PSA1	538	720	295
1-R-NV-1012 (b)	PSCO	PSA1	540	720	295
1-R-NV-1119	PSCO	PSA1	4524	720	295
1-R-NV-1309	PSCO	PSA1/2	12200	720	295
1-R-NV-1564	PSCO	PSA1/2	13489	720	295
1-R-NV-2155	PSCO	PSA1/2	11773	720	295
1-R-NV-2157	PSCO	PSA1/2	4787	720	295

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1-R-NW-0002	PSCO	PSA1/2	13834	720	295
1-R-RN-0073 (b)	PSCO	PSA10	6272	720	295
1-R-RN-0084	PSCO	PSA3	19821	720	295
1-R-RN-0096	PSCO	PSA10	10888	720	295
1-R-RN-0326	PSCO	PSA3	6762	720	295
1-R-RN-0345 (a)	PSCO	PSA3	6357	720	295
1-R-RN-0366	PSCO	PSA35	4320	720	295
1-R-RN-0367	PSCO	PSA35	9707	720	295
1-R-RN-0506 (a)	PSCO	PSA3	19969	720	295
1-R-RN-0506 (b)	PSCO	PSA3	19935	720	295
1-R-RN-0578	PSCO	PSA1/2	16349	720	295
1-R-RN-0751 (a)	PSCO	PSA35	8892	720	295
1-R-RN-0751 (b)	PSCO	PSA35	5766	720	295
1-R-RN-1051	PSCO	PSA1	4316	720	295
1-R-RN-1074	PSCO	PSA3	8738	720	295
1-R-SA-1503	PSCO	PSA1	17292	720	295
1-R-SA-1530	PSCO	PSA1	3471	720	295
1-R-SB-2045	PSCO	PSA10	9422	720	295
1-R-SC-2064	PSCO	PSA10	3599	720	295
1-R-SC-2068	PSCO	PSA3	4687	720	295
1-R-SC-2075 (a)	PSCO	PSA10	3384	720	295
1-R-SC-2075 (b)	PSCO	PSA10	3453	720	295
1-R-SC-2076	PSCO	PSA35	2649	720	295
1-R-SC-2078	PSCO	PSA3	19908	720	295
1-R-SC-2079	PSCO	PSA35	6891	720	295
1-R-SC-2080 (a)	PSCO	PSA3	3619	720	295
1-R-SC-2082 (a)	PSCO	PSA10	3510	720	295
1-R-SC-2082 (b)	PSCO	PSA10	3488	720	295
1-R-SC-2083	PSCO	PSA35	8898	720	295
1-R-SM-1000	PSCO	PSA35	3811	720	295
1-R-SM-1001	PSCO	PSA35	3850	720	295
1-R-SM-1004	PSCO	PSA35	6505	720	295
1-R-SM-1005	PSCO	PSA35	6454	720	295
1-R-SM-1009	PSCO	PSA35	8516	720	295
1-R-SM-1010	PSCO	PSA35	3395	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-SM-1011	PSCO	PSA35	6455	720	295
1-R-SM-1014	PSCO	PSA35	8855	720	295
1-R-SM-1018	PSCO	PSA35	8868	720	295
1-R-SM-1021	PSCO	PSA35	6464	720	295
1-R-SM-1024	PSCO	PSA35	3798	720	295
1-R-SM-1537 (a)	PSCO	PSA10	4642	720	295
1-R-SM-1541 (a)	PSCO	PSA35	8895	720	295
1-R-SM-1541 (b)	PSCO	PSA35	8848	720	295
1-R-SM-1545 (b)	PSCO	PSA35	8521	720	295
1-R-SM-1553 (b)	PSCO	PSA10	5701	720	295
1-R-SM-1555	PSCO	PSA35	6458	720	295
1-R-SM-1556 (a)	PSCO	PSA35	6442	720	295
1-R-SM-1556 (b)	PSCO	PSA35	4834	720	295
1-R-SM-1557 (a)	PSCO	PSA10	4797	720	295
1-R-SM-1557 (b)	PSCO	PSA10	4828	720	295
1-R-SM-1560 (a)	PSCO	PSA35	2638	720	295
1-R-SM-1560 (b)	PSCO	PSA35	2650	720	295
1-R-SM-1568	PSCO	PSA35	3823	720	295
1-R-SM-1570 (b)	PSCO	PSA10	6004	720	295
1-R-SM-1573 (a)	PSCO	PSA35	6900	720	295
1-R-SM-1573 (b)	PSCO	PSA35	5771	720	295
1-R-SM-1577 (a)	PSCO	PSA35	4321	720	295
1-R-SM-1577 (b)	PSCO	PSA35	4266	720	295
1-R-SM-1578 (a)	PSCO	PSA10	3249	720	295
1-R-SM-1581	PSCO	PSA35	4699	720	295
1-R-SM-1582 (a)	PSCO	PSA10	4634	720	295
1-R-SM-1582 (b)	PSCO	PSA10	4648	720	295
1-R-SM-1583 (b)	PSCO	PSA10	5733	720	295
1-R-SM-2004	PSCO	PSA3	111	720	295
1-R-SM-2034 (a)	PSCO	PSA35	6894	720	295
1-R-SM-2034 (b)	PSCO	PSA35	8879	720	295
1-R-SM-2035 (a)	PSCO	PSA35	235	720	295
1-R-SM-2035 (b)	PSCO	PSA35	236	720	295
1-R-SM-2036 (a)	PSCO	PSA35	261	720	295
1-R-SM-2036 (b)	PSCO	PSA35	239	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-SM-2037 (a)	PSCO	PSA35	5746	720	295
1-R-SM-2037 (b)	PSCO	PSA35	5736	720	295
1-R-SV-1516	PSCO	PSA3	8674	720	295
1-R-TE-0047	PSCO	PSA3	9758	720	295
1-S-NR-5002 (b)	PSCO	PSA1/2	13507	720	295
1-S-NR-5002 (c)	PSCO	PSA1/2	12288	720	295
1-S-NR-5002 (d)	PSCO	PSA1/2	13208	720	295
1-S-NR-5007	PSCO	PSA1/2	14601	720	295
1-S-NR-5011	PSCO	PSA1	7342	720	295
1-S-NR-5013	PSCO	PSA1/2	12063	720	295
1-S-VQ-5025	PSCO	PSA1	2994	720	295
2-A-KC-4309	PSCO	PSA1/2	9908	720	295
2-A-NI-4401	PSCO	PSA1/2	9912	720	295
2-A-NV-3558	PSCO	PSA1/2	20498	720	295
2-A-YC-3249	PSCO	PSA1	9284	720	295
2-R-BB-1023	PSCO	PSA1	9949	720	295
2-R-BB-1031 (a)	PSCO	PSA1	7905	720	295
2-R-BB-1031 (b)	PSCO	PSA1	7217	720	295
2-R-BB-2180 (a)	PSCO	PSA3	11126	720	295
2-R-CA-1676	PSCO	PSA1/2	8858	720	295
2-R-CF-1559 (a)	PSCO	PSA10	6599	720	295
2-R-CF-1703	PSCO	PSA1	9796	720	295
2-R-HR-2073	PSCO	PSA3	19907	720	295
2-R-HR-2074	PSCO	PSA3	19879	720	295
2-R-HR-2075	PSCO	PSA10	6588	720	295
2-R-HR-2079	PSCO	PSA3	8499	720	295
2-R-KC-0022	PSCO	PSA1	12946	720	295
2-R-KC-0023	PSCO	PSA1	9783	720	295
2-R-KC-0038	PSCO	PSA1	12882	720	295
2-R-KC-0276	PSCO	PSA3	25098	720	295
2-R-KC-0376	PSCO	PSA10	5994	720	295
2-R-NC-1452	PSCO	PSA1	8184	720	295
2-R-NC-1472	PSCO	PSA1	9480	720	295
2-R-NC-1516	PSCO	PSA3	10041	720	295
2-R-NC-1671 (a)	PSCO	PSA3	11077	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-NC-1684 (a)	PSCO	PSA10	6216	720	295
2-R-NC-1713	PSCO	PSA10	6616	720	295
2-R-NC-1747 (a)	PSCO	PSA3	12720	720	295
2-R-NC-1747 (b)	PSCO	PSA3	10062	720	295
2-R-ND-0301	PSCO	PSA1	9773	720	295
2-R-NI-1631	PSCO	PSA1/2	8844	720	295
2-R-NI-1854	PSCO	PSA1	4670	720	295
2-R-NI-1873	PSCO	PSA1	9291	720	295
2-R-NM-0061 (a)	PSCO	PSA1/2	15535	720	295
2-R-NM-1130	PSCO	PSA1/2	16461	720	295
2-R-NM-1272	PSCO	PSA1/2	9889	720	295
2-R-NM-1282	PSCO	PSA1/4	12031	720	295
2-R-NV-1292	PSCO	PSA1	10120	720	295
2-R-NV-1424	PSCO	PSA1/2	10658	720	295
2-R-NV-1456 (a)	PSCO	PSA1/2	11779	720	295
2-R-NV-1891	PSCO	PSA1	12497	720	295
2-R-NV-1917 (b)	PSCO	PSA1/2	10154	720	295
2-R-NV-1943	PSCO	PSA1	9811	720	295
2-R-RN-0006	PSCO	PSA10	8179	720	295
2-R-RN-0030	PSCO	PSA3	9848	720	295
2-R-RN-0037	PSCO	PSA1	8959	720	295
2-R-SA-1520	PSCO	PSA1	9290	720	295
2-R-SC-2035	PSCO	PSA35	6892	720	295
2-R-SC-2049	PSCO	PSA3	19971	720	295
2-R-SC-2054	PSCO	PSA3	19777	720	295
2-R-SC-2058	PSCO	PSA35	8876	720	295
2-R-SC-2060(a)	PSCO	PSA3	3592	720	295
2-R-SC-2060(b)	PSCO	PSA3	19865	720	295
2-R-SC-2067	PSCO	PSA35	8877	720	295
2-R-SM-1000	PSCO	PSA35	5827	720	295
2-R-SM-1004	PSCO	PSA35	5737	720	295
2-R-SM-1014	PSCO	PSA35	6441	720	295
2-R-SM-1015	PSCO	PSA35	6509	720	295
2-R-SM-1025	PSCO	PSA35	5770	720	295
2-R-SM-1034	PSCO	PSA35	6439	720	295

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-SM-1536	PSCO	PSA35	5750	720	295
2-R-SM-1537 (a)	PSCO	PSA35	5739	720	295
2-R-SM-1537 (b)	PSCO	PSA35	5740	720	295
2-R-SM-1551 (a)	PSCO	PSA35	5756	720	295
2-R-SM-1551 (b)	PSCO	PSA35	6889	720	295
2-R-SM-1555	PSCO	PSA35	5769	720	295
2-R-SM-1556 (b)	PSCO	PSA35	5761	720	295
2-R-SM-1565	PSCO	PSA35	5735	720	295
2-R-SM-1566 (a)	PSCO	PSA10	6808	720	295
2-R-SM-1568	PSCO	PSA35	5752	720	295
2-R-SM-1578	PSCO	PSA35	5744	720	295
2-R-SM-1581	PSCO	PSA35	5763	720	295
2-R-SM-1598 (b)	PSCO	PSA35	6506	720	295
2-R-SV-1568	PSCO	PSA1	12144	720	295
2-R-TE-0004	PSCO	PSA1	9764	720	295
2-R-TE-0023	PSCO	PSA1	9969	720	295
2-R-TE-0025 (a)	PSCO	PSA1	9040	720	295
2-R-TE-0052	PSCO	PSA1	11847	720	295
2-R-TE-0053	PSCO	PSA1	12514	720	295
2-R-WL-1213	PSCO	PSA1/2	9880	720	295
2-R-YC-0028	PSCO	PSA1	9922	720	295
2-R-YC-0046	PSCO	PSA1	17310	720	295
2-R-YC-0048	PSCO	PSA1/2	7612	720	295
1-A-CA-4023	PSCO	PSA1/2	12088	720	307
1-A-CA-4028	PSCO	PSA1/2	13230	720	307
1-A-FW-4005	PSCO	PSA1/2	11784	720	307
1-A-KC-3348	PSCO	PSA1/2	11767	720	307
1-A-KC-3481	PSCO	PSA1	17252	720	307
1-A-KC-3788	PSCO	PSA1/2	11770	720	307
1-A-KC-3798	PSCO	PSA1/2	13491	720	307
1-A-KC-3919	PSCO	PSA1/2	11128	720	307
1-A-KC-4305	PSCO	PSA1	13793	720	307
1-A-KC-4357	PSCO	PSA1/2	13570	720	307
1-A-KC-4358	PSCO	PSA1/2	17450	720	307
1-A-KC-4720	PSCO	PSA1/2	12192	720	307

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-A-KF-3081	PSCO	PSA1/2	12303	720	307
1-A-NB-3469	PSCO	PSA1	12329	720	307
1-A-NB-3600	PSCO	PSA1/2	12012	720	307
1-A-NB-8270	PSCO	PSA1/2	12053	720	307
1-A-NB-8401	PSCO	PSA1/2	13660	720	307
1-A-NB-8412	PSCO	PSA1/2	11760	720	307
1-A-NI-4111	PSCO	PSA1/2	13683	720	307
1-A-NI-4118	PSCO	PSA1/2	13026	720	307
1-A-NI-4119	PSCO	PSA1/2	13231	720	307
1-A-NI-4265	PSCO	PSA1/2	13248	720	307
1-A-NI-4296	PSCO	PSA1/2	13551	720	307
1-A-NI-4369	PSCO	PSA1/2	13635	720	307
1-A-NI-4385	PSCO	PSA1/2	12261	720	307
1-A-NI-4408	PSCO	PSA1/2	11100	720	307
1-A-NI-4410	PSCO	PSA1/2	13342	720	307
1-A-NR-3108	PSCO	PSA1	17245	720	307
1-A-NV-3142	PSCO	PSA1/2	12250	720	307
1-A-NV-3546	PSCO	PSA1/2	7206	720	307
1-A-NV-4202	PSCO	PSA1/2	13268	720	307
1-A-NV-4211	PSCO	PSA1/2	13680	720	307
1-A-NV-8035	PSCO	PSA1/2	11160	720	307
1-A-NV-8151	PSCO	PSA1/2	11535	720	307
1-A-NV-8290 (b)	PSCO	PSA1/2	13502	720	307
1-A-NV-8322	PSCO	PSA1/2	10064	720	307
1-A-NV-8470	PSCO	PSA1/2	12254	720	307
1-A-NV-8486	PSCO	PSA1/2	11112	720	307
1-A-NV-8509	PSCO	PSA1/2	13580	720	307
1-A-NV-8559	PSCO	PSA1/2	13048	720	307
1-A-WG-8628 (a)	PSCO	PSA1/2	11534	720	307
1-A-WL-3165	PSCO	PSA1/2	13614	720	307
1-A-WL-3207	PSCO	PSA1	17558	720	307
1-A-WL-3216	PSCO	PSA1	17322	720	307
1-A-WL-3341	PSCO	PSA1/2	13576	720	307
1-A-WL-3367	PSCO	PSA1	4579	720	307
1-A-WL-3992	PSCO	PSA1/2	13511	720	307

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-A-WL-8051	PSCO	PSA1/2	13648	720	307
1-A-YC-3392	PSCO	PSA1/2	13485	720	307
1-A-YM-4004	PSCO	PSA1/2	13484	720	307
1-R-AS-0142	PSCO	PSA1/2	13506	720	307
1-R-BB-1492	PSCO	PSA1	16786	720	307
1-R-BB-1744	PSCO	PSA1	3454	720	307
1-R-BB-1841 ©	PSCO	PSA1/2	17529	720	307
1-R-CA-0288	PSCO	PSA3	19870	720	307
1-R-CA-1578	PSCO	PSA1	17460	720	307
1-R-CF-1568 (a)	PSCO	PSA10	11549	720	307
1-R-CF-1612	PSCO	PSA1/2	13675	720	307
1-R-CF-1670 (a)	PSCO	PSA1	17447	720	307
1-R-CF-1743	PSCO	PSA1	17523	720	307
1-R-KC-1303	PSCO	PSA1/2	11587	720	307
1-R-KC-1371 (a)	PSCO	PSA1/2	11123	720	307
1-R-KC-1371 (b)	PSCO	PSA1/2	12043	720	307
1-R-KC-1819	PSCO	PSA1	12422	720	307
1-R-NC-1041	PSCO	PSA10	9491	720	307
1-R-NC-1063	PSCO	PSA1	17052	720	307
1-R-NC-1071	PSCO	PSA3	15940	720	307
1-R-NC-1078	PSCO	PSA1	9471	720	307
1-R-NC-1488	PSCO	PSA1/2	13011	720	307
1-R-NC-1594	PSCO	PSA10	11979	720	307
1-R-NC-1597(a)	PSCO	PSA10	12062	720	307
1-R-NC-1597(b)	PSCO	PSA10	9494	720	307
1-R-NC-1601	PSCO	PSA10	12069	720	307
1-R-NC-1604	PSCO	PSA10	11550	720	307
1-R-NC-1607	PSCO	PSA35	8541	720	307
1-R-NC-1609	PSCO	PSA10	11545	720	307
1-R-NC-1611(a)	PSCO	PSA10	9503	720	307
1-R-NC-1611(b)	PSCO	PSA10	9484	720	307
1-R-NC-1617	PSCO	PSA1	17514	720	307
1-R-NC-1619	PSCO	PSA3	16034	720	307
1-R-NC-1620(a)	PSCO	PSA3	16036	720	307
1-R-NC-1620(b)	PSCO	PSA3	16145	720	307

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-NC-1621(a)	PSCO	PSA3	16035	720	307
1-R-NC-1621(b)	PSCO	PSA3	15938	720	307
1-R-NC-1623	PSCO	PSA3	15936	720	307
1-R-NC-1637	PSCO	PSA3	15934	720	307
1-R-NC-1639	PSCO	PSA3	16033	720	307
1-R-NC-1644	PSCO	PSA1/2	13833	720	307
1-R-NC-1647	PSCO	PSA1/2	13812	720	307
1-R-NC-1653	PSCO	PSA10	9492	720	307
1-R-NC-1691	PSCO	PSA1/2	13893	720	307
1-R-NC-1732	PSCO	PSA1/2	11549	720	307
1-R-NC-1767	PSCO	PSA1/2	11550	720	307
1-R-NC-1805 (a)	PSCO	PSA1	17055	720	307
1-R-NC-1805 (b)	PSCO	PSA1	13778	720	307
1-R-NC-2209 (b)	PSCO	PSA10	11543	720	307
1-R-ND-0397 (b)	PSCO	PSA1	17343	720	307
1-R-ND-0442	PSCO	PSA1/2	11165	720	307
1-R-ND-0584	PSCO	PSA1	17291	720	307
1-R-NI-1062 (a)	PSCO	PSA1/2	15834	720	307
1-R-NI-1062 (b)	PSCO	PSA1/2	11540	720	307
1-R-NI-1101	PSCO	PSA1/2	13737	720	307
1-R-NI-2311	PSCO	PSA10	9456	720	307
1-R-NI-2322	PSCO	PSA1/2	13681	720	307
1-R-NI-2323	PSCO	PSA1/2	13684	720	307
1-R-NI-2333	PSCO	PSA1	17469	720	307
1-R-NI-2334	PSCO	PSA1/2	12189	720	307
1-R-NI-2339	PSCO	PSA1	17300	720	307
1-R-NI-2381	PSCO	PSA1/2	14684	720	307
1-R-NI-2403	PSCO	PSA1/2	13763	720	307
1-R-NM-1083	PSCO	PSA1/2	11586	720	307
1-R-NV-0274 (a)	PSCO	PSA1/2	13880	720	307
1-R-NV-1295	PSCO	PSA1/2	13872	720	307
1-R-NV-1367	PSCO	PSA1	13863	720	307
1-R-NV-1523	PSCO	PSA1/2	13814	720	307
1-R-NV-1736	PSCO	PSA1	16794	720	307
1-R-NV-1918	PSCO	PSA1/2	11545	720	307

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-NV-1932 (a)	PSCO	PSA1	13744	720	307
1-R-NV-1932 (b)	PSCO	PSA1	17244	720	307
1-R-NV-2144	PSCO	PSA1/2	12055	720	307
1-R-RN-0603	PSCO	PSA1	17565	720	307
1-R-SM-1536	PSCO	PSA35	8509	720	307
1-R-SM-1537 (b)	PSCO	PSA10	5746	720	307
1-R-SM-1542 (a)	PSCO	PSA10	12631	720	307
1-R-SM-1545 (a)	PSCO	PSA35	8508	720	307
1-R-SM-1564 (a)	PSCO	PSA35	4224	720	307
1-R-SM-2031	PSCO	PSA100	1217	720	307
1-R-TE-0023	PSCO	PSA3	19925	720	307
1-R-WL-1265	PSCO	PSA1/2	13858	720	307
1-S-NR-5016	PSCO	PSA1/2	13024	720	307
1-S-NR-5017 (b)	PSCO	PSA1/2	13891	720	307
1-S-VQ-5003	PSCO	PSA3	19911	720	307
2-A-FW-4005	PSCO	PSA1/2	13033	720	307
2-A-KC-3313	PSCO	PSA1/2	13558	720	307
2-A-KC-4202	PSCO	PSA1/2	11563	720	307
2-A-NV-3477	PSCO	PSA1/2	14188	720	307
2-A-NV-3621	PSCO	PSA1/2	12214	720	307
2-A-NV-3674	PSCO	PSA1/2	13754	720	307
2-A-NV-3827	PSCO	PSA1/2	15756	720	307
2-A-YC-3015	PSCO	PSA1/2	10686	720	307
2-A-YC-3036	PSCO	PSA1	17328	720	307
2-A-YC-3093	PSCO	PSA1/2	13679	720	307
2-A-YC-3120	PSCO	PSA1/2	12983	720	307
2-R-BB-1018	PSCO	PSA1/2	11758	720	307
2-R-BB-1098	PSCO	PSA1	9255	720	307
2-R-BB-1513	PSCO	PSA3	19917	720	307
2-R-BB-1518	PSCO	PSA1/2	11106	720	307
2-R-BB-2292	PSCO	PSA3	19963	720	307
2-R-CA-0098	PSCO	PSA1/2	12034	720	307
2-R-CA-1527 (a)	PSCO	PSA1	17452	720	307
2-R-CA-1527 (b)	PSCO	PSA1	17476	720	307
2-R-CA-1532	PSCO	PSA1/2	11162	720	307

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2-R-CA-1590	PSCO	PSA3	19927	720	307
2-R-CA-1691	PSCO	PSA1/2	12260	720	307
2-R-CF-1544	PSCO	PSA10	11980	720	307
2-R-CF-1559 (b)	PSCO	PSA10	10887	720	307
2-R-CF-1581 (a)	PSCO	PSA10	12015	720	307
2-R-CF-1581 (b)	PSCO	PSA10	10890	720	307
2-R-CF-1587	PSCO	PSA10	11993	720	307
2-R-CF-1593	PSCO	PSA10	11934	720	307
2-R-CF-1662	PSCO	PSA1/2	12007	720	307
2-R-CF-1675	PSCO	PSA3	19975	720	307
2-R-CF-1721	PSCO	PSA3	19964	720	307
2-R-CF-1722	PSCO	PSA1/2	12190	720	307
2-R-CF-1723	PSCO	PSA1	532	720	307
2-R-FW-0019 (a)	PSCO	PSA10	11962	720	307
2-R-FW-0019 (b)	PSCO	PSA10	11978	720	307
2-R-HR-2047	PSCO	PSA3	19787	720	307
2-R-HR-2066	PSCO	PSA10	11578	720	307
2-R-HR-2067(b)	PSCO	PSA3	19977	720	307
2-R-HR-2076	PSCO	PSA10	11573	720	307
2-R-HR-2078	PSCO	PSA10	11569	720	307
2-R-KC-0019	PSCO	PSA10	11998	720	307
2-R-KC-0086	PSCO	PSA3	19951	720	307
2-R-KC-0297	PSCO	PSA1	17551	720	307
2-R-KC-0415	PSCO	PSA1	17297	720	307
2-R-KC-0420	PSCO	PSA3	19959	720	307
2-R-KC-0435	PSCO	PSA10	12076	720	307
2-R-KC-0438	PSCO	PSA10	11544	720	307
2-R-NB-0094	PSCO	PSA1/2	13479	720	307
2-R-NB-0127	PSCO	PSA1/2	14222	720	307
2-R-NC-0002 (a)	PSCO	PSA1/2	13049	720	307
2-R-NC-1440	PSCO	PSA1/2	13333	720	307
2-R-NC-1667	PSCO	PSA10	9497	720	307
2-R-NC-1672	PSCO	PSA1	17464	720	307
2-R-NC-1673 (b)	PSCO	PSA3	19905	720	307
2-R-NC-1674	PSCO	PSA10	9493	720	307

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-NC-1681 (b)	PSCO	PSA10	9406	720	307
2-R-NC-1682 (b)	PSCO	PSA3	19949	720	307
2-R-NC-1692	PSCO	PSA3	19940	720	307
2-R-NC-1702	PSCO	PSA3	19881	720	307
2-R-NC-1706	PSCO	PSA3	19937	720	307
2-R-NC-1709	PSCO	PSA10	11534	720	307
2-R-NC-1716	PSCO	PSA10	11972	720	307
2-R-NC-1743	PSCO	PSA1/2	13882	720	307
2-R-NC-1921	PSCO	PSA1/2	12016	720	307
2-R-NC-1925	PSCO	PSA1/2	11617	720	307
2-R-NC-1931	PSCO	PSA1/2	11129	720	307
2-R-ND-0159	PSCO	PSA3	19866	720	307
2-R-ND-0259	PSCO	PSA3	19972	720	307
2-R-ND-0263	PSCO	PSA3	19946	720	307
2-R-ND-0270	PSCO	PSA1	17456	720	307
2-R-ND-0325	PSCO	PSA1	17449	720	307
2-R-ND-0383 (a)	PSCO	PSA1/2	13534	720	307
2-R-ND-0383 (b)	PSCO	PSA1/2	13612	720	307
2-R-ND-1017	PSCO	PSA1	17470	720	307
2-R-NI-0108	PSCO	PSA1/2	13000	720	307
2-R-NI-0112	PSCO	PSA1/2	13516	720	307
2-R-NI-1058	PSCO	PSA1/2	13498	720	307
2-R-NI-1115	PSCO	PSA1/2	12998	720	307
2-R-NI-1758 (a)	PSCO	PSA10	9489	720	307
2-R-NI-1865	PSCO	PSA1/2	13645	720	307
2-R-NM-0061 (b)	PSCO	PSA1/2	13030	720	307
2-R-NM-1193	PSCO	PSA1/2	13757	720	307
2-R-NM-1343	PSCO	PSA1/2	12083	720	307
2-R-NR-0011	PSCO	PSA1/2	11565	720	307
2-R-NV-1114	PSCO	PSA1/2	11183	720	307
2-R-NV-1115	PSCO	PSA1/2	12262	720	307
2-R-NV-1456 (b)	PSCO	PSA1/2	13671	720	307
2-R-NV-1838	PSCO	PSA1/2	11620	720	307
2-R-NV-1899	PSCO	PSA1/2	11761	720	307
2-R-NV-1917 (a)	PSCO	PSA1/2	8008	720	307

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-NV-1918	PSCO	PSA1/2	13320	720	307
2-R-NV-1945	PSCO	PSA1	13665	720	307
2-R-NV-2052	PSCO	PSA3	19960	720	307
2-R-RN-0187 (a)	PSCO	PSA3	19856	720	307
2-R-RN-0187 (b)	PSCO	PSA3	19955	720	307
2-R-RN-0190 (a)	PSCO	PSA3	19875	720	307
2-R-RN-0190 (b)	PSCO	PSA3	19933	720	307
2-R-RN-0208	PSCO	PSA3	19888	720	307
2-R-SA-0020 (a)	PSCO	PSA1/2	11622	720	307
2-R-SA-0020 (b)	PSCO	PSA1/2	13666	720	307
2-R-SC-2033(a)	PSCO	PSA10	11566	720	307
2-R-SC-2033(b)	PSCO	PSA10	10930	720	307
2-R-SC-2038	PSCO	PSA10	6571	720	307
2-R-SC-2065(a)	PSCO	PSA10	11551	720	307
2-R-SM-1003 (a)	PSCO	PSA10	11977	720	307
2-R-SM-1003 (b)	PSCO	PSA10	11974	720	307
2-R-SM-1020	PSCO	PSA35	8518	720	307
2-R-SM-1023 (a)	PSCO	PSA10	11576	720	307
2-R-SM-1023 (b)	PSCO	PSA10	11557	720	307
2-R-SM-1033 (a)	PSCO	PSA10	12026	720	307
2-R-SM-1033 (b)	PSCO	PSA10	12029	720	307
2-R-SM-1549 (a)	PSCO	PSA10	11976	720	307
2-R-SM-1549 (b)	PSCO	PSA10	11951	720	307
2-R-SM-1553 (a)	PSCO	PSA10	11540	720	307
2-R-SM-1557 (a)	PSCO	PSA10	12072	720	307
2-R-SM-1557 (b)	PSCO	PSA10	12056	720	307
2-R-SM-1566 (b)	PSCO	PSA10	11968	720	307
2-R-SM-1570 (a)	PSCO	PSA10	11541	720	307
2-R-SM-1579 (b)	PSCO	PSA10	12033	720	307
2-R-SM-1582 (b)	PSCO	PSA10	12070	720	307
2-R-SM-1604 (a)	PSCO	PSA35	8530	720	307
2-R-SM-1712	PSCO	PSA1	17288	720	307
2-R-SV-1550	PSCO	PSA3	19882	720	307
2-R-TL-2086	PSCO	PSA1	17465	720	307
2-R-WL-1192	PSCO	PSA1/2	13303	720	307

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-YC-0045	PSCO	PSA1/2	10140	720	307
2-R-YC-0068 (a)	PSCO	PSA1/2	13014	720	307
2-S-NR-5508	PSCO	PSA1/2	13564	720	307
2-S-NR-5523	PSCO	PSA1/2	13493	720	307
2-S-NR-5524 (b)	PSCO	PSA1/2	11778	720	307
1-A-KC-4122	PSCO	PSA1/2	15532	720	319
1-A-KC-4189	PSCO	PSA1/2	15313	720	319
1-A-KC-4219	PSCO	PSA1/2	15551	720	319
1-A-KC-4299	PSCO	PSA1/2	14897	720	319
1-A-KC-4885	PSCO	PSA1/2	14257	720	319
1-A-KC-4899	PSCO	PSA1/2	14637	720	319
1-A-KC-4955	PSCO	PSA1/2	15594	720	319
1-A-KC-8227	PSCO	PSA1/2	15743	720	319
1-A-NB-8035	PSCO	PSA1/2	14371	720	319
1-A-NB-8098	PSCO	PSA1/2	14891	720	319
1-A-NB-8185	PSCO	PSA1/2	14020	720	319
1-A-NI-4251	PSCO	PSA1/2	13990	720	319
1-A-NI-4252	PSCO	PSA1/2	14856	720	319
1-A-NI-4253	PSCO	PSA1/2	15276	720	319
1-A-NI-4409	PSCO	PSA1/2	15277	720	319
1-A-NR-3092	PSCO	PSA1/2	15581	720	319
1-A-NV-8055	PSCO	PSA1/2	14327	720	319
1-A-NV-8259	PSCO	PSA1/2	14267	720	319
1-A-NV-8290 (a)	PSCO	PSA1/2	15595	720	319
1-A-NV-8347	PSCO	PSA1/2	14296	720	319
1-A-NV-8349	PSCO	PSA1/2	16373	720	319
1-A-NV-8353	PSCO	PSA1/2	15592	720	319
1-A-NV-8443	PSCO	PSA1/2	14225	720	319
1-A-NV-8557	PSCO	PSA1/2	14191	720	319
1-A-WG-3357	PSCO	PSA1/2	15696	720	319
1-A-WG-3635	PSCO	PSA1/2	15571	720	319
1-A-WG-3665	PSCO	PSA1/2	13997	720	319
1-A-WL-3556	PSCO	PSA1/2	14000	720	319
1-A-WL-3597	PSCO	PSA1/2	14062	720	319
1-A-YC-3410	PSCO	PSA1/2	15330	720	319

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-AS-0138	PSCO	PSA1/2	13998	720	319
1-R-BB-1579	PSCO	PSA1/2	15305	720	319
1-R-BB-1742	PSCO	PSA1/2	15704	720	319
1-R-BB-1767	PSCO	PSA1/2	14402	720	319
1-R-BB-1783	PSCO	PSA1/2	14398	720	319
1-R-BW-1008	PSCO	PSA1/4	34548	720	319
1-R-CA-1601	PSCO	PSA1/2	7259	720	319
1-R-CF-1022	PSCO	PSA10	12649	720	319
1-R-CF-1728	PSCO	PSA1/2	14400	720	319
1-R-CF-1731	PSCO	PSA1/2	14399	720	319
1-R-CF-1737	PSCO	PSA1/2	15682	720	319
1-R-NC-1052	PSCO	PSA1/2	15575	720	319
1-R-NC-1093	PSCO	PSA1/2	15341	720	319
1-R-NC-1192	PSCO	PSA1/2	14265	720	319
1-R-NC-1645	PSCO	PSA1/2	15812	720	319
1-R-ND-0618	PSCO	PSA1/2	14284	720	319
1-R-ND-0619	PSCO	PSA1/2	14707	720	319
1-R-NI-2019	PSCO	PSA1/2	15772	720	319
1-R-NI-2401	PSCO	PSA1/2	15283	720	319
1-R-NI-2406	PSCO	PSA1/2	15272	720	319
1-R-NM-1081	PSCO	PSA1/2	14888	720	319
1-R-NM-1305	PSCO	PSA1/2	14889	720	319
1-R-NS-0102	PSCO	PSA1/2	20494	720	319
1-R-NV-1283	PSCO	PSA1/2	15774	720	319
1-R-NV-1579	PSCO	PSA1/2	14894	720	319
1-R-NV-1629	PSCO	PSA1/2	15593	720	319
1-R-NV-2071	PSCO	PSA1/2	15584	720	319
1-R-NV-2143	PSCO	PSA1/2	15687	720	319
1-R-SM-1029	PSCO	PSA35	8860	720	319
1-R-SM-1038	PSCO	PSA35	8864	720	319
1-R-SM-1550	PSCO	PSA35	9687	720	319
1-R-SM-1551 (b)	PSCO	PSA35	8867	720	319
1-R-SM-1565	PSCO	PSA35	9266	720	319
1-R-SM-1586 (a)	PSCO	PSA35	8869	720	319
1-R-SM-1586 (b)	PSCO	PSA35	8900	720	319

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-WL-1112	PSCO	PSA1/2	15739	720	319
1-S-NR-5002 (a)	PSCO	PSA1/2	15589	720	319
2-A-CA-4013	PSCO	PSA1/2	15357	720	319
2-A-KC-4167	PSCO	PSA1/2	14893	720	319
2-A-KC-4312	PSCO	PSA1/2	15552	720	319
2-A-NI-4324	PSCO	PSA1/2	15801	720	319
2-A-NV-3387	PSCO	PSA1/2	14077	720	319
2-A-NV-3629	PSCO	PSA1/2	15825	720	319
2-A-YC-3080	PSCO	PSA1/2	15528	720	319
2-R-BB-1005	PSCO	PSA1/2	14807	720	319
2-R-BB-1047	PSCO	PSA1/2	15531	720	319
2-R-BB-1062 (a)	PSCO	PSA1/2	14232	720	319
2-R-BB-1522	PSCO	PSA1/2	16383	720	319
2-R-CA-1688	PSCO	PSA3	25104	720	319
2-R-CF-1006	PSCO	PSA35	9665	720	319
2-R-CF-1009	PSCO	PSA35	9706	720	319
2-R-CF-1541	PSCO	PSA35	8878	720	319
2-R-CF-1605 (a)	PSCO	PSA3	25132	720	319
2-R-CF-1647	PSCO	PSA1/2	14176	720	319
2-R-HR-2072	PSCO	PSA3	25189	720	319
2-R-KC-0467	PSCO	PSA1/2	15765	720	319
2-R-KC-0484	PSCO	PSA1/2	14705	720	319
2-R-KC-1550	PSCO	PSA1/2	14206	720	319
2-R-KC-1782	PSCO	PSA1/2	15826	720	319
2-R-KC-1788	PSCO	PSA1/2	15705	720	319
2-R-NC-0002 (b)	PSCO	PSA1/2	15695	720	319
2-R-NC-1700 (a)	PSCO	PSA1/2	13994	720	319
2-R-NC-1700 (b)	PSCO	PSA1/2	15586	720	319
2-R-NC-1704	PSCO	PSA10	12640	720	319
2-R-NC-1711	PSCO	PSA35	8859	720	319
2-R-NC-1715	PSCO	PSA35	9705	720	319
2-R-NC-1721	PSCO	PSA35	8865	720	319
2-R-ND-0047	PSCO	PSA3	25222	720	319
2-R-ND-0440	PSCO	PSA1/2	16384	720	319
2-R-NI-1054	PSCO	PSA3	25086	720	319

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-NI-1585	PSCO	PSA1/2	14226	720	319
2-R-NI-1626	PSCO	PSA1/2	15560	720	319
2-R-NI-1627	PSCO	PSA1/2	16375	720	319
2-R-NI-1629	PSCO	PSA1/2	14681	720	319
2-R-NI-1692	PSCO	PSA35	8874	720	319
2-R-NI-1858	PSCO	PSA1/2	15759	720	319
2-R-NI-1862	PSCO	PSA1/2	16346	720	319
2-R-NI-1868	PSCO	PSA1/2	15780	720	319
2-R-NI-1869	PSCO	PSA1/2	15708	720	319
2-R-NI-1871	PSCO	PSA1/2	15545	720	319
2-R-NM-1129	PSCO	PSA1/2	15800	720	319
2-R-NM-1158 (b)	PSCO	PSA1/2	14162	720	319
2-R-NR-0031 (a)	PSCO	PSA1/2	16381	720	319
2-R-NR-0031 (b)	PSCO	PSA1/2	16449	720	319
2-R-NV-0243 (a)	PSCO	PSA1/2	15778	720	319
2-R-NV-0328	PSCO	PSA1/2	15755	720	319
2-R-NV-0369	PSCO	PSA1/2	14243	720	319
2-R-NV-1837	PSCO	PSA1/2	14952	720	319
2-R-NV-1889	PSCO	PSA1/2	14070	720	319
2-R-NV-1990	PSCO	PSA1/2	15807	720	319
2-R-NV-2034	PSCO	PSA1/2	15565	720	319
2-R-RN-0014	PSCO	PSA35	9704	720	319
2-R-SB-2042	PSCO	PSA35	8888	720	319
2-R-SM-1009	PSCO	PSA35	8889	720	319
2-R-SM-1010	PSCO	PSA35	8904	720	319
2-R-SM-1018	PSCO	PSA35	8849	720	319
2-R-SM-1038	PSCO	PSA35	8873	720	319
2-R-SM-1540	PSCO	PSA35	8899	720	319
2-R-SM-1541 (a)	PSCO	PSA35	9667	720	319
2-R-SM-1541 (b)	PSCO	PSA35	8890	720	319
2-R-SM-1550	PSCO	PSA35	8902	720	319
2-R-SM-1564 (a)	PSCO	PSA35	9682	720	319
2-R-SM-1564 (b)	PSCO	PSA35	9684	720	319
2-R-SM-1569 (b)	PSCO	PSA35	9724	720	319
2-R-SM-1577 (a)	PSCO	PSA35	9715	720	319

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
2-R-SM-1577 (b)	PSCO	PSA35	9701	720	319
2-R-SM-1598 (a)	PSCO	PSA35	8907	720	319
2-R-SM-1604 (b)	PSCO	PSA35	8871	720	319
2-R-SM-2002	PSCO	PSA35	323	720	319
2-R-YC-0068 (b)	PSCO	PSA1/2	14213	720	319
2-S-NR-5515 (a)	PSCO	PSA1/2	15727	720	319
1-A-NI-4258	PSCO	PSA1/2	17406	720	331
1-A-NI-4378	PSCO	PSA1/2	17603	720	331
1-R-CF-1726	PSCO	PSA1/2	17612	720	331
1-R-NC-0042	PSCO	PSA1/2	17611	720	331
1-R-NM-1405	PSCO	PSA1/4	35519	720	331
1-R-NV-0274 (b)	PSCO	PSA1/2	17607	720	331
2-A-NV-3679	PSCO	PSA1/2	17426	720	331
2-R-CA-0132	PSCO	PSA1/2	17610	720	331
2-R-CA-0206	PSCO	PSA1/2	17396	720	331
2-R-KC-0553	PSCO	PSA1/2	17605	720	331
2-R-NC-0005	PSCO	PSA1/2	17499	720	331
2-R-NC-1109	PSCO	PSA1/2	17395	720	331
2-R-NC-1687	PSCO	PSA3	28169	720	331
2-R-NC-1688	PSCO	PSA3	28190	720	331
2-R-NC-1690 (a)	PSCO	PSA3	28180	720	331
2-R-NC-1690 (b)	PSCO	PSA3	28166	720	331
2-R-NC-1691 (a)	PSCO	PSA1/2	17431	720	331
2-R-NC-1691 (b)	PSCO	PSA1/2	18447	720	331
2-R-NC-1693	PSCO	PSA3	28152	720	331
2-R-NC-1696	PSCO	PSA3	28187	720	331
2-R-NC-1699 (a)	PSCO	PSA3	28147	720	331
2-R-NC-1699 (b)	PSCO	PSA3	28144	720	331
2-R-ND-1022	PSCO	PSA1/2	17446	720	331
2-R-ND-1023	PSCO	PSA1/2	17438	720	331
2-R-NI-1630	PSCO	PSA1/2	17427	720	331
2-R-NI-1633	PSCO	PSA1/2	10628	720	331
2-R-NI-1826	PSCO	PSA1/2	17442	720	331
2-R-NI-1874	PSCO	PSA1/2	17422	720	331
2-R-NM-1262	PSCO	PSA1/2	18455	720	331

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2-R-NM-1379	PSCO	PSA1/2	17493	720	331
2-R-NV-0243 (b)	PSCO	PSA1/2	17609	720	331
2-R-NV-1556	PSCO	PSA1/2	17503	720	331
2-R-NV-1922	PSCO	PSA1/2	18454	720	331
2-R-NV-2033	PSCO	PSA1/2	17397	720	331
2-R-SA-0018	PSCO	PSA1/2	17606	720	331
2-R-SM-2025	PSCO	PSA100	2741	720	331
2-R-SM-2029	PSCO	PSA100	128	720	331
2-R-YC-0042	PSCO	PSA1/2	17421	720	331
1-R-CF-1519	PSCO	PSA35	12440	720	343
1-R-CF-1705	PSCO	PSA1	724	720	343
2-R-CA-1675	PSCO	PSA1	723	720	343
2-R-CF-1522	PSCO	PSA35	12439	720	343
2-R-CF-1724	PSCO	PSA1	805	720	343
2-R-NC-1846	PSCO	PSA1	816	720	343
2-R-NV-1186	PSCO	PSA1	808	720	343
2-R-NV-1187	PSCO	PSA1	809	720	343
2-R-NV-1188	PSCO	PSA1	818	720	343
2-R-NV-1192	PSCO	PSA1	727	720	343
2-R-SM-2033	PSCO	PSA100	181	720	343
1-R-BB-1709	PSCO	PSA1	365	720	355
2-R-CA-1677	PSCO	PSA1/2	17495	720	355
1-A-KC-4887	PSCO	PSA1/2	20335	720	367
1-A-NI-4097	PSCO	PSA1/2	20336	720	367
1-R-BW-1001	PSCO	PSA1/4	37708	720	367
2-R-NC-1923	PSCO	PSA1/2	13685	720	367
2-R-NI-1852	PSCO	PSA1/4	37707	720	367
2-R-CF-1605 (b)	PSCO	PSA3	6393	720	379
2-R-SM-2021	PSCO	PSA100	189	720	379
2-R-CA-1524	PSCO	PSA1/2	20489	720	403
2-R-CA-1672	PSCO	PSA1/2	20491	720	403
1-R-NV-1735	PSCO	PSA1	12828	720	415
1-R-SM-1551 (a)	PSCO	PSA35	13037	720	415
2-R-SM-1556 (a)	PSCO	PSA35	13038	720	415
1-R-NV-0004	PSCO	PSA1	26143	720	427

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1-R-BB-1353	PSCO	PSA1/2	20808	720	451
1-R-BB-1485	PSCO	PSA1/2	20856	720	451
1-R-SM-1013 (a)	PSCO	PSA10	18171	720	451
1-R-SM-1013 (b)	PSCO	PSA10	18218	720	451
1-R-SM-1539	PSCO	PSA35	13132	720	451
1-R-SM-1566 (a)	PSCO	PSA35	13133	720	451
1-R-BB-1423	PSCO	PSA1	941	720	463
1-R-BB-1487	PSCO	PSA1/2	20809	720	463
1-R-BB-1704	PSCO	PSA1/2	20807	720	463
1-R-BB-1707	PSCO	PSA1/2	20806	720	463
1-R-BB-1752 (b)	PSCO	PSA1/2	20802	720	463
1-R-WL-1463	PSCO	PSA1/2	20803	720	463
2-R-NC-1724	PSCO	PSA10	18170	720	463
2-R-NV-1074	PSCO	PSA1/2	20805	720	463
1-R-BB-1350	PSCO	PSA1/2	20863	720	487
1-R-BB-1829	PSCO	PSA1/2	20858	720	487
1-R-BB-1830	PSCO	PSA1/2	20860	720	487
1-R-BB-1841 (b)	PSCO	PSA1	20862	720	487
1-R-CF-1016	PSCO	PSA10	18214	720	487
1-R-CF-1019	PSCO	PSA10	18215	720	487
1-R-CF-1025	PSCO	PSA10	18217	720	487
1-R-NC-2302	PSCO	PSA1/2	20861	720	487
1-R-SM-1003 (a)	PSCO	PSA10	18216	720	487
1-R-SM-1003 (b)	PSCO	PSA10	18219	720	487
1-R-SM-1023 (a)	PSCO	PSA10	18211	720	487
1-R-SM-1023 (b)	PSCO	PSA10	18212	720	487
1-R-SM-1033 (a)	PSCO	PSA10	18222	720	487
1-R-SM-1033 (b)	PSCO	PSA10	18223	720	487
2-R-CF-1725	PSCO	PSA1	40034	720	511
1-A-KC-3353	PSCO	PSA1/2	41239	720	523
1-A-KC-4930	PSCO	PSA1/2	41240	720	523
1-R-ND-0397 (a)	PSCO	PSA1	40265	720	523
1-R-ND-1191	PSCO	PSA1	40264	720	523
2-R-NM-1158 (a)	PSCO	PSA1/2	41242	720	523
1-R-CF-1562 (a)	PSCO	PSA10	41277	720	535

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-CF-1562 (b)	PSCO	PSA10	41402	720	535
1-R-CF-1681	PSCO	PSA1	41713	720	535
1-R-CF-1805	PSCO	PSA1	41752	720	535
1-R-SM-1542 (b)	PSCO	PSA10	41403	720	535
1-R-SM-1549 (b)	PSCO	PSA10	41386	720	535
1-R-SM-1578 (b)	PSCO	PSA10	41385	720	535
2-R-CF-1584 (a)	PSCO	PSA10	41278	720	535
2-R-NC-1717	PSCO	PSA10	41400	720	535
2-R-NM-1079	PSCO	PSA1	41425	720	535
2-R-RN-0036	PSCO	PSA1	41705	720	535
2-R-SA-1504	PSCO	PSA1	41706	720	535
1-A-NV-8475	PSCO	PSA1/2	41789	720	547
1-R-BB-1573	PSCO	PSA1/2	41791	720	547
1-R-NC-2227	PSCO	PSA1/2	41790	720	547
1-R-SM-1680	PSCO	PSA1	41708	720	547
1-R-CF-1543 (a)	PSCO	PSA3	42183	720	559
1-R-CF-1778	PSCO	PSA1	42139	720	559
1-R-CF-1785	PSCO	PSA1	42138	720	559
1-R-ND-0391 (a)	PSCO	PSA1	41696	720	559
1-R-ND-0391 (b)	PSCO	PSA1	41703	720	559
2-R-NC-1520	PSCO	PSA3	42182	720	559
2-R-SM-2038 (b)	PSCO	PSA100	42252	720	559
1-R-SM-2032 (a)	PSCO	PSA100	428900	720	595
2-R-SM-2037 (a)	PSCO	PSA100	42255C	720	595
2-R-SM-2037 (b)	PSCO	PSA100	42929C	720	595
2-R-SM-2038 (a)	PSCO	PSA100	49490C	720	595
2-R-SM-2039	PSCO	PSA100	42921C	720	595
1-A-NV-8503	PSCO	PSA1	43026	720	607
1-R-CA-1706	PSCO	PSA1	43022	720	607
1-R-ND-0181	PSCO	PSA1	43021	720	607
1-R-SM-2032 (b)	PSCO	PSA100	428920	720	607

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Mark No	Manf.	Model	Serial No.	Expected Life (months)	Remaining Life (months)
1-R-SM-2033 (a)	PSCO	PSA100	428930	720	607
1-R-SM-2033 (b)	PSCO	PSA100	428940	720	607
2-R-SA-1503	PSCO	PSA1	43028	720	607
2-R-YC-0007 (a)	PSCO	PSA1	43023	720	607

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1-SG-AL SN77620-12	12/21/1988	1/1/1988	499	8/1/2029	170
1-SG-AR SN77620-16	12/21/1988	1/1/1988	499	8/1/2029	170
1-SG-BL SN77620-11	11/25/2006	1/1/1988	499	8/1/2029	170
1-SG-BR SN77620-17	5/18/2008	1/1/1988	499	8/1/2029	170
1-SG-CL SN77620-14	5/29/2005	1/1/1988	499	8/1/2029	170
1-SG-CR SN77620-13	3/19/2015	1/1/1988	499	8/1/2029	170
1-SG-DL SN77620-10	12/21/1988	1/1/1988	499	8/1/2029	170
1-SG-DR SN77620-15	12/3/2012	1/1/1988	499	8/1/2029	170
2-SG-AL SN77620-21	10/8/2007	1/1/1988	499	8/1/2029	170
2-SG-AR SN77620-20	4/8/2006	1/1/1988	499	8/1/2029	170
2-SG-BL SN77620-25	4/17/1989	1/1/1988	499	8/1/2029	170
2-SG-BR SN77620-23	4/17/1989	1/1/1988	499	8/1/2029	170
2-SG-CL SN77620-24	3/19/2015	1/1/1988	499	8/1/2029	170
2-SG-CR SN77620-19	10/1/2013	1/1/1988	499	8/1/2029	170
2-SG-DL SN77620-18	4/17/1989	1/1/1988	499	8/1/2029	170
2-SG-DR SN77620-22	4/17/1989	1/1/1988	499	8/1/2029	170
1-R-BB-1415	5/24/2008	1/1/2005	300	1/1/2030	175
1-R-CF-1783	6/13/2008	1/1/2005	300	1/1/2030	175
1-R-CF-1784	6/13/2008	1/1/2005	300	1/1/2030	175
1-R-ND-0178 (b)	1/13/2011	1/1/2005	300	1/1/2030	175
2-R-NR-0013	9/26/2007	1/1/2005	300	1/1/2030	175
1-A-NV-8103	10/29/2012	1/1/2006	300	1/1/2031	187
1-R-CF-1536 (a)	5/25/2008	1/1/2006	300	1/1/2031	187
1-R-CF-1559 (b)	5/25/2008	1/1/2006	300	1/1/2031	187
1-R-CF-1581 (a)	11/26/2006	1/1/2006	300	1/1/2031	187
1-R-NC-1536	5/20/2008	1/1/2006	300	1/1/2031	187
1-R-SM-1608 (a)	5/25/2008	1/1/2006	300	1/1/2031	187
1-R-SM-1610 (a)	11/26/2006	1/1/2006	300	1/1/2031	187
1-R-SM-1610 (b)	11/26/2006	1/1/2006	300	1/1/2031	187
1-R-SM-1612 (a)	11/27/2006	1/1/2006	300	1/1/2031	187
1-R-SM-1612 (b)	11/27/2006	1/1/2006	300	1/1/2031	187
2-A-NV-3840 (a)	9/27/2007	1/1/2006	300	1/1/2031	187

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2-A-NV-3840 (b)	9/27/2007	1/1/2006	300	1/1/2031	187
2-R-SM-1590 (b)	9/30/2007	1/1/2006	300	1/1/2031	187
2-R-SM-1596 (a)	9/30/2007	1/1/2006	300	1/1/2031	187
2-R-SM-1596 (b)	9/30/2007	1/1/2006	300	1/1/2031	187
2-R-SM-1602 (a)	9/30/2007	1/1/2006	300	1/1/2031	187
2-R-SM-1602 (b)	9/30/2007	1/1/2006	300	1/1/2031	187
2-R-SM-1608 (a)	9/30/2007	1/1/2006	300	1/1/2031	187
2-R-SM-1608 (b)	9/30/2007	1/1/2006	300	1/1/2031	187
2-R-TL-2083	3/26/2009	1/1/2006	300	1/1/2031	187
1-R-CF-1536 (b)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-CF-1559 (a)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-FW-0001 (a)	5/21/2008	1/1/2007	300	1/1/2032	199
1-R-FW-0001 (b)	5/21/2008	1/1/2007	300	1/1/2032	199
1-R-KC-0247	5/27/2011	1/1/2007	300	1/1/2032	199
1-R-KC-1477	5/7/2011	1/1/2007	300	1/1/2032	199
1-R-KD-0122	10/6/2011	1/1/2007	300	1/1/2032	199
1-R-RN-0394 (a)	6/1/2008	1/1/2007	300	1/1/2032	199
1-R-RN-0394 (b)	6/1/2008	1/1/2007	300	1/1/2032	199
1-R-SB-2044	5/20/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1590 (a)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1590 (b)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1596 (a)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1596 (b)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1598 (a)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1598 (b)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1602 (a)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1602 (b)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1604 (a)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1604 (b)	5/25/2008	1/1/2007	300	1/1/2032	199
1-R-SM-1608 (b)	5/25/2008	1/1/2007	300	1/1/2032	199
2-A-NI-4349	3/26/2009	1/1/2007	300	1/1/2032	199
2-A-RN-3209	3/16/2009	1/1/2007	300	1/1/2032	199
2-A-RN-3213	3/30/2009	1/1/2007	300	1/1/2032	199
2-A-YC-3127	9/24/2010	1/1/2007	300	1/1/2032	199

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2-R-CF-1523 (a)	3/23/2012	1/1/2007	300	1/1/2032	199
2-R-CF-1523 (b)	3/23/2012	1/1/2007	300	1/1/2032	199
2-R-FW-0003 (a)	3/24/2009	1/1/2007	300	1/1/2032	199
2-R-FW-0003 (b)	3/24/2009	1/1/2007	300	1/1/2032	199
2-R-ND-0370	1/17/2011	1/1/2007	300	1/1/2032	199
2-R-SM-1542 (a)	3/23/2012	1/1/2007	300	1/1/2032	199
2-R-SM-1542 (b)	3/23/2012	1/1/2007	300	1/1/2032	199
2-R-SM-1590 (a)	9/30/2007	1/1/2007	300	1/1/2032	199
1-A-KC-8011	11/20/2009	1/1/2008	300	1/1/2033	211
1-A-KC-8652	11/17/2009	1/1/2008	300	1/1/2033	211
1-A-NI-4137	11/24/2009	1/1/2008	300	1/1/2033	211
1-A-VG-3158	6/6/2011	1/1/2008	300	1/1/2033	211
1-R-BB-1582	12/2/2009	1/1/2008	300	1/1/2033	211
1-R-KC-0309	5/30/2011	1/1/2008	300	1/1/2033	211
1-R-NC-1633	12/1/2009	1/1/2008	300	1/1/2033	211
1-R-ND-0178 (a)	1/13/2011	1/1/2008	300	1/1/2033	211
1-R-NI-2404	11/18/2009	1/1/2008	300	1/1/2033	211
1-R-RN-0874(a)	12/1/2009	1/1/2008	300	1/1/2033	211
1-R-RN-0874(b)	12/1/2009	1/1/2008	300	1/1/2033	211
1-R-VN-0004	10/6/2011	1/1/2008	300	1/1/2033	211
1-R-VN-0044	10/19/2011	1/1/2008	300	1/1/2033	211
2-A-RN-3221	6/30/2010	1/1/2008	300	1/1/2033	211
2-R-BB-1081	3/31/2009	1/1/2008	300	1/1/2033	211
2-R-KC-0600 (a)	1/23/2012	1/1/2008	300	1/1/2033	211
2-R-KC-0600 (b)	1/23/2012	1/1/2008	300	1/1/2033	211
2-R-NC-1695	9/30/2010	1/1/2008	300	1/1/2033	211
2-R-VN-0004	6/11/2012	1/1/2008	300	1/1/2033	211
2-R-VN-0044	12/7/2011	1/1/2008	300	1/1/2033	211
1-A-FD-3007	6/29/2011	1/1/2009	300	1/1/2034	223
1-A-FD-3024	6/7/2011	1/1/2009	300	1/1/2034	223
1-A-FD-3046	6/29/2011	1/1/2009	300	1/1/2034	223
1-A-FD-3065	6/6/2011	1/1/2009	300	1/1/2034	223
1-A-VG-3147	6/30/2011	1/1/2009	300	1/1/2034	223
1-A-VG-3153	6/7/2011	1/1/2009	300	1/1/2034	223

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1-A-VG-3154	6/30/2011	1/1/2009	300	1/1/2034	223
1-R-KD-0022	6/29/2011	1/1/2009	300	1/1/2034	223
1-R-LD-0085	6/13/2011	1/1/2009	300	1/1/2034	223
1-R-NC-1642	12/15/2012	1/1/2009	300	1/1/2034	223
1-R-NC-1643	12/15/2012	1/1/2009	300	1/1/2034	223
1-R-NC-2212	5/17/2011	1/1/2009	300	1/1/2034	223
1-R-ND-0596	8/28/2006	1/1/2009	300	1/1/2034	223
1-R-RN-0566	7/3/2013	1/1/2009	300	1/1/2034	223
1-R-VN-0007	11/28/2011	1/1/2009	300	1/1/2034	223
1-R-VN-0048	7/27/2011	1/1/2009	300	1/1/2034	223
1-R-VN-0093	11/28/2011	1/1/2009	300	1/1/2034	223
2-A-RN-3217	7/7/2010	1/1/2009	300	1/1/2034	223
2-R-LD-0019	3/10/1997	1/1/2009	300	1/1/2034	223
2-R-NC-1705 (a)	9/30/2010	1/1/2009	300	1/1/2034	223
2-R-NC-1705 (b)	9/30/2010	1/1/2009	300	1/1/2034	223
2-R-SA-0021	9/29/2010	1/1/2009	300	1/1/2034	223
2-R-VN-0055	8/10/2011	1/1/2009	300	1/1/2034	223
2-R-YC-0043	9/24/2010	1/1/2009	300	1/1/2034	223
1-R-ND-0182	8/29/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0010	6/6/2012	1/1/2010	300	1/1/2035	235
1-R-VN-0014	11/28/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0015	11/28/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0050	7/27/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0051	10/19/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0053	7/27/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0055	7/27/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0056	10/19/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0095	7/27/2011	1/1/2010	300	1/1/2035	235
1-R-VN-0096	7/26/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0007	8/10/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0009	8/11/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0010	8/11/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0012	8/10/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0014	8/11/2011	1/1/2010	300	1/1/2035	235

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2-R-VN-0015	8/11/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0050	9/21/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0093	8/10/2011	1/1/2010	300	1/1/2035	235
2-R-VN-0094	8/10/2011	1/1/2010	300	1/1/2035	235
1-A-KC-4232	12/8/2012	1/1/2011	300	1/1/2036	247
1-R-CF-1745	5/7/2014	1/1/2011	300	1/1/2036	247
1-R-KC-0592 (a)	11/30/2012	1/1/2011	300	1/1/2036	247
1-R-KC-0592 (b)	11/30/2012	1/1/2011	300	1/1/2036	247
1-R-KD-0074	12/1/2012	1/1/2011	300	1/1/2036	247
1-R-NC-1068	5/27/2014	1/1/2011	300	1/1/2036	247
1-R-ND-0341	12/4/2012	1/1/2011	300	1/1/2036	247
1-R-VN-0009	6/6/2012	1/1/2011	300	1/1/2036	247
1-R-VN-0012	11/28/2011	1/1/2011	300	1/1/2036	247
1-R-VN-0094	11/28/2011	1/1/2011	300	1/1/2036	247
2-R-CF-1588 (b)	3/12/2015	1/1/2011	300	1/1/2036	247
2-R-CF-1650	9/20/2013	1/1/2011	300	1/1/2036	247
2-R-GN-1518	3/5/2015	1/1/2011	300	1/1/2036	247
2-R-KD-0033	12/7/2011	1/1/2011	300	1/1/2036	247
2-R-KD-0072	12/7/2011	1/1/2011	300	1/1/2036	247
2-R-KD-0084	11/30/2011	1/1/2011	300	1/1/2036	247
2-R-NC-1524 (a)	3/29/2012	1/1/2011	300	1/1/2036	247
2-R-NC-1524 (b)	3/29/2012	1/1/2011	300	1/1/2036	247
2-R-NV-0095	3/6/2015	1/1/2011	300	1/1/2036	247
2-R-SB-2040	9/15/2013	1/1/2011	300	1/1/2036	247
2-R-VN-0048	12/5/2011	1/1/2011	300	1/1/2036	247
2-R-VN-0051	12/7/2011	1/1/2011	300	1/1/2036	247
2-R-VN-0053	12/5/2011	1/1/2011	300	1/1/2036	247
2-R-VN-0056	12/7/2011	1/1/2011	300	1/1/2036	247
2-R-VN-0095	12/5/2011	1/1/2011	300	1/1/2036	247
2-R-VN-0096	12/5/2011	1/1/2011	300	1/1/2036	247

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<< Service Life List for Lisega Snubbers >>

Mark No	Date Installed	Date Rebuilt	Expected Life (months)	Next Rebuild or Reevaluation	Remaining Life (months)
2-R-CF-1588 (a)	3/12/2015	1/1/2012	300	1/1/2037	259
2-R-HR-2083(a)	9/30/2013	1/1/2012	300	1/1/2037	259
2-R-HR-2083(b)	9/30/2013	1/1/2012	300	1/1/2037	259
2-R-SB-2041	9/26/2013	1/1/2012	300	1/1/2037	259