Record of conference call between Licensee (Duane Arnold) and NRC staff pertaining to efforts to restore operability of an Emergency Diesel Generator

A. Original notice for conference call on May 9, 2008

The subject matter expert from HQ for commercial grade dedication is Paul Prescott (301-415-3026). Paul is briefed and I have passed his information requests (in prep for a 1:00 PM CT conf call) to Nick Shah. Paul is in HQ until 3:00 PM leaving time (in a car pool). I have his cell phone # for access later and this weekend, if needed.

Bridge Line Info is:

1-888-381-5775 with pass code **37974 #** with a capacity of **10 lines**. I will enter the bridge approx 12:55 PM CT, as host, from my phone (301-415-3079). During the call, as needed, contact me by email or by cell phone (XXX-XXX-XXXX) – *personally identifiable information (PII) deleted for document prepared as a public record – kf 05/12/2008)*

If you have information that you would like to distribute to other listed parties, please provide items to me **no later than 12:30 PM CT** (1:30 PM ET). Nick is researching some information for Paul, which may go directly or through me, at his option.

To allow some latitude, I asked for a spread of 12:30-5:00PM ET, in case a vital party indicates they cannot attend.

However, **the nominal start time is 1:00 PM CT (2:00 PM ET),** unless notified otherwise.

I have no contact information for other attendees. please act as their point(s) of contact or supply their names and affiliations to me for direct notifications.

I may supplement this conference call notice with a meeting request through Outlook.

B. Reminder - Call starts at 1:00 PM CT. Handout distributed by Randy (Randal Baker)

Requested change by Randy and comment by Dave Hills. created potential for time adjustment. **However, meeting time remains 1:00 PM CT** (see below). Vital parties would not have been able to participate. Please coordinate any time changes through Nick Shah.

Randy distributed an attachment for the discussion of commercial dedication. Contact him or myself for a copy.

Note that my (Karl Feintuch's) Outlook is displaying local (ET) time for the event. Rely on the text of this message - kf.

C. Documents distributed to participants and discussed:

- C.1 - Commercial Dedication Procedure ,

- C.2 - Upgrade Evaluation for item to be dedicated, and Revision 1 of same (updated May 16, 2008 for scanning into record – kf 5/16/2008)

- C.3 - Responses to questions from NRC (David Hills, Paul Prescott)

See attached documents

D. Conference Call Participants

FPL (associated with Duane Arnold)	NRC (Region 3)	NRC (Headquarters)
B. Murrell S. Catron R. Anderson J. Cadagon K. Kleinheinz D. Church G. Pry B. Taylor C. Zalewski G. Park E. Sorenson	David Hills Mel Holberg Tom Bilik Nirodh (Nick) Shah Christian Scott Robert Orikowski Randal (Randy) Baker	Paul Prescott Jay Collins Keith Hoffman Dale Thatcher Karl Feintuch

E. Conference Call Description

The conference call began at 2:00 PM ET and concluded at approximately 2:45 PM. The purpose of the call was for Duane Arnold participants to brief NRC participants on the actions undertaken by Licensee to restore operability to the Emergency Diesel Generator (EDG). The installed expansion bellows at the Heat Exchanger outlet to the Emergency Service Water had been repaired by a qualified weld, but had leaked during a benth test, although it had past required testing as installed.

The discussion focused on the efforts to restore operability to the EDG using a procured bellows processed through a Commercial Grade Dedication per the Commercial Dedication Procedure. The NRC team was being briefed in preparation for the possibility that EDG operability might not occur prior to the expiration of the associated Limiting Condition of Operation (LCO), in the absence of regulatory action that might be requested.

F. Subsequent Events

The licensee restored operability to the Emergency Diesel Generator (EDG) at approximately 11:59 PM CT on May 9, 2008. No action was requested

G. Organization of this record

This record was prepared from the text of a string of email messages (Sections A and B), as supplemented by grouped information (Sections C, D, E) compiled on 5/12/2008, after the successful restoration of operability of the Emergency Diesel Generator (see in Section G).

Record (updated 16May2008) of Conference Call.doc
Karl Feintuch, May 16, 2008 Karl Feintuch

DAEC SUPPLY CHAIN PROCEDURE	DAEC-SC-PEG-04
DAEC DEDICATION AND UPGRADE OF COMMERCIAL GRADE ITEMS	**Rev. 3** Page 1 of 37

Usage Level

REFERENCE

Effective Date:

TECHNICAL REVIEW

Prepared by: _____ Date: _____

Validated by: _____ Date: _____
Supply Chain Staff

PROCEDURE APPROVAL

I am responsible for the technical content of this procedure.

Verified and Approved by Procedure Owner: _____ Date: _____
Supply Chain Manager

Distributed document C.1

1.0 PURPOSE

(1) The purpose of this procedure is to establish responsibilities and methods by which Commercial Grade Items (CGI) or Services are to be accepted as suitable for safety-related applications or for augmented quality applications at the Duane Arnold Energy Center (DAEC).

(2) This procedure is applicable to the Engineering Evaluations which are performed in order to procure and/or install Commercial Grade Items or Services for use in applications which have additional quality requirements imposed by DAEC (Quality Status SR or AQ).

(3) This procedure shall be used to evaluate all items requiring dedication/upgrade regardless of whether the items will be installed during maintenance or during plant modifications.

2.0 DEFINITIONS

The following definitions are contained in or supplement those contained in FPL-1 "Quality Assurance Topical Report" (QATR).

(1) **Acceptance** - The employment of methods to produce objective evidence which provides reasonable assurance that the item received is the item specified and performs its intended safety function. (EPRI NP-5652)

(2) **Augmented Quality Items** - Non-Safety-Related items for which the utility has made a regulatory or design commitment; or, for plant availability reasons, the utility has implemented special controls to assure reliability. The augmented quality items are generally included within the scope of utility quality assurance program. This term also applies to 10 CFR 72 Important to Safety items. (EPRI NP-6629 and Reference 18)

(3) **Basic Component** - See FPL-1 "Quality Assurance Topical Report" (QATR)

(4) **Classification of Subcomponents/Materials** - An evaluation documenting the Safety/Licensing Function(s) and Failure Modes and Effects Analysis (FMEA) of a subcomponent or material that determines the safety classification (quality level) of the item.

(5) **Commercial Grade Item** - See FPL-1 "Quality Assurance Topical Report" (QATR)

(6) **Commodity Item** - An item having a generic application throughout a nuclear unit, which lends itself to bulk procurement (e.g., nuts, bolts, materials, terminal lugs, fuses, capacitors, resistors, etc.).

(7) **Component** - A piece of equipment such as a vessel, pump, valve, core support structure, relay or circuit breaker, which is combined with other components to form an assembly. Components typically are designated with an identification number (e.g., Tag No.). (EPRI NP-6629)

(8) **Critical Characteristics** - Those important design, material, and performance characteristics of a commercial grade item that, once verified, will provide reasonable assurance that the item will perform its intended safety function.

(9) **Critical Characteristics for Acceptance** - Identifiable and measurable attributes/variables of a commercial grade item which, once selected to be verified, provide reasonable assurance that the item received will perform its intended safety function and is the item specified. Subset of step (10) below. (EPRI NP-5652, NP-6406) {C004}

(10) **Critical Characteristics for Design** - Those properties or attributes which are essential for the item's form, fit and functional performance. Critical characteristics for design are identifiable and/or measurable attributes of an item which provide assurance that the item will perform its design function. (EPRI NP-6629)

(11) **Dedication** - See FPL-1 "Quality Assurance Topical Report" (QATR)

(12) **Dedicating Entity** - See FPL-1 "Quality Assurance Topical Report" (QATR)

(13) **Design Function** - The operation an item is required to perform to meet the component or system design basis.

(14) **Equivalency Evaluation** - A technical evaluation performed to confirm that an alternate item, not identical to the original, will satisfactorily perform its intended function once in service. This term is synonymous with "Equal-to-or-Better-Than" Evaluation. (EPRI NP-5652)

(15) **Failure Modes and Effects Analysis (FMEA)** - An evaluation of an item's credible failure mechanisms and their effect on system/component function. (EPRI NP-6406)

(16) **Failure Mode** - The effect or conditions which result from an item's credible failure mechanisms. (EPRI NP-6629)

(17) **Failure Mechanism** - The manner by which an item may fail, degrading the item's ability to perform the component/system function under evaluation.

(18) **Item** - Any level of unit assembly, including structures, systems, subsystems, subassembly, component, part, or material. (ANSI N45.2.10-1973)

(19) **Important Characteristic** - Characteristics identified for the upgrade of an item to Quality Status AQ. These characteristics are those which are used to verify that the item satisfies technical/quality requirements, licensing or other commitments. These important characteristics are not basic component critical characteristics.

(20) **Important to Safety** - See FPL-1 "Quality Assurance Topical Report" (QATR)

(21) **Non-Safety-Related Item** - An item which does not perform a Safety-Related function. (EPRI NP-5652)

(22) **Parent** - An item/component with a specific plant I.D. number.

(23) **Requisition** - An MMS electronic document used to specify the technical and quality requirements for procurement of items or services.

(24) **Simple Item** - An item that is not complex, such as not having many moving parts, assemblies, etc.

(25) **Safety Function** - A function that if lost could create a substantial safety hazard.

- **Passive Safety Function** - A safety function which requires no change in state or position to achieve the safety function (e.g., pressure boundary, circuit integrity).
- **Active Safety Function** - A safety function which requires a change in state or position to achieve the safety function (e.g., switch actuation).

(26) **Safety-Related Item** - A plant structure, system, component or part thereof, necessary to assure:

- The integrity of the Reactor Coolant Pressure Boundary, or
- The capability to shut down the reactor and maintain it in a shutdown condition, or
- The capability to prevent or mitigate the consequence of accidents which could result in potential offsite radiation exposures comparable to those referred to in 10 CFR Part 100.11.

(27) **Substantial Safety Hazard** - See FPL-1 "Quality Assurance Topical Report" (QATR)

(28) **Upgrade** - The point after which a commercial grade item is acceptable for applications (not designated for use as a 10 CFR 21 basic component) which require additional quality requirements due to licensing or other commitments.

3.0 INSTRUCTIONS

3.1 PROGRAM RESPONSIBILITIES

(1) The Responsible Engineer (RE) is anyone from the DAEC who initiates a Commercial Grade Dedication/Upgrade Package. The RE is responsible for:

- Preparing Evaluations in accordance with this procedure,
- Assuring that the purchase specification for replacement item(s) complies with the original purchase specification and codes or a properly reviewed and approved revision thereto,
- Preparing test procedures/instructions necessary to verify the Critical Characteristics,
- Resolving comments made by the Seismic Reviewer, Environmental Qualification (EQ) Reviewer, or Supplier Assessment Reviewer (optional) during review of the Commercial Grade Dedication/Upgrade Evaluation, as applicable.
- Initiating changes to the Stock Item # and Phrase Codes description to reference the Commercial Grade Dedication/Upgrade Evaluation, including the current revision number.

3.2 PROGRAM REQUIREMENTS

(1) Commercial Grade Dedication/Upgrade Evaluations are to meet the guidance of Reference (1) and requirements of 10CFR21, Reference (4) to which DAEC is committed for the use of commercial grade items as basic components.

(2) A receipt inspection verifying only part number is not an acceptable method of verifying Critical Characteristics for Commercial Grade Dedication/Upgrade. (EPRI NP-5652)

(3) Engineering Evaluations for Commercial Grade items to be used as basic components shall be documented on the Commercial Grade Dedication/Upgrade Evaluation Form (Attachment 1).

(4) Any Evaluation affecting equipment in the Environmental Qualification (EQ) Program shall be reviewed by the Long Term Programs Group. (10CFR50.49(L)) and Administrative Control Procedure (ACP) 102.9.

(5) For simple items/services, an Engineering Evaluation of an upgrade does not require the use of Commercial Grade Dedication/Upgrade Evaluation Form, but the purchase specification shall contain the following as a minimum (EPRI NP-5652):

(a) Provisions to ensure that the item/service meets all technical requirements and complies with any original purchase specifications or codes. These requirements may be satisfied by referencing the Stock Item # if one exists.

(b) Acceptance criteria and acceptance methods for verifying important characteristics.

(c) A requirement for the item/service to be processed through Receipt Inspection.

(d) A statement that the item is to be upgraded.

These requirements may be met by the purchase specifications. The complexity of the item/service and acceptance process shall determine whether an upgrade requires the use of a Commercial Grade Dedication/Upgrade Evaluation.

(6) If calculations are submitted as part of the acceptance of an item, the level of review must be in accordance with Reference 9.

3.3 COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION PROCESSING

(1) Attachment 2 provides specific line-by-line directions for completing the Commercial Grade Dedication/Upgrade Evaluation.

(2) Critical characteristics for acceptance shall be developed with consideration for the following as applicable:

- The potential consequences of failure of the item. Both nuclear safety and plant/ISFSI operability aspects shall be considered (dedication only),
- The historical performance of the supplier(s) in providing items which meet established requirements,
- The historical performance of the item in service,
- The complexity of the item design and the manufacturing process,
- Industry experience with similar items which have a history of being substandard or provided with fraudulent certifications,
- The operability that verifying the acceptance criteria has on the item's operability,
- The cost of verifying specific acceptance criteria relative to the increased assurance provided through verification,
- The access a supplier will grant to his facilities,
- Whether an item will be manufactured as a result of a purchase order or if the purchase order will be filled from available stock,
- Whether the item(s) comes(come) directly from the manufacturer or from a third party qualifier or distributor,
- Availability of design information,

- Periodic checks performed by the manufacturer to confirm acceptance (In-Process Testing, Non-Destructive Examination, Special Process Inspection, etc.),
- The capability to verify the Acceptance Criteria through post-installation testing and its effect on plant operations,
- Confidence of the utility in supplier provided documentation,
- The practicality of performing source verification,
- Receiving inspection and testing capability,
- Supplier personnel training certification/qualification,
- Supplier material controls,
- Specifications, codes, standards, regulations and qualification requirements.

(3) Commercial Grade Dedication/Upgrade Evaluations of a generic class of item, "commodity item" (e.g., resistor, terminal blocks, washers, etc.), or of items for a range of applications, may be performed using Commercial Grade Dedication/Upgrade Evaluation. Care must be taken to consider the most stringent applications.

3.4 REVIEW AND SIGNATURE REQUIREMENTS FOR THE COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATIONS

(1) After completion of the Dedication/Upgrade Evaluation, the Responsible Engineer shall sign the Dedication Evaluation and forward the evaluation to the Long Term Programs Group (EQ Coordinator/EQ Engineer) for review and approval. The EQ review is not required if the parent component of the item is not in the EQ Program (e.g., CHAMPS Equipment Screen, EQ Data Field is N/A). {C002} If the EQ review is not required, the Responsible Engineer may mark the "EQ signature block" as not required or N/A.

(2) If EQ is required per 3.4 (1) above, an EQ reviewer shall review the Commercial Grade Dedication/Upgrade Evaluation for adequacy and content as it relates to the DAEC EQ program. Upon satisfactory resolution of comments, the EQ reviewer shall sign the Commercial Grade Dedication/Upgrade Package as the "EQ Reviewer".

(3) If the Responsible Engineer, by virtue of the equivalency evaluation (Section G), can show that the item being dedicated is similar (e.g., configuration, material, dimensions, and weight) to the original item (the intent of Attachment 6, "Maintaining Seismic and Environmental Qualification", is met), then the seismic review is not required and the Responsible Engineer may mark the "Seismic Reviewer" block as not required or N/A.

If equivalency cannot be shown, then the evaluation must be forwarded to the seismic reviewer for review. A seismic reviewer shall review the Commercial Grade Dedication/Upgrade Evaluation for seismic adequacy. Upon satisfactory resolution of comments, the seismic reviewer shall sign and date the Commercial Grade Dedication/Upgrade Evaluation as Seismic Reviewer.

(4) A qualified member of PEG shall review the Commercial Grade Dedication/Upgrade Evaluation for completeness and verify it is implementable. This review shall include verification that the EQ and seismic reviews have been completed as required, proper technical and engineering justification have been considered, and implementation of the receipt criteria is achievable.

This individual is required to ensure that the Master Commercial Grade Dedication Log reflects the current revision and a copy of the completed evaluation have been sent to Receiving.

(5) Commercial Grade Dedication/Upgrade Evaluations that evaluate similar replacement items, non-EQ, require only the signature of one PEG Engineer. Items that are not similar require a second independent review.

Example (Similar item)

- If the Responsible Engineer is a PEG Engineer, then that individual may also sign as the PEG Engineer.
- If the Responsible Engineer is anyone other than a qualified PEG individual, then the Dedication/Upgrade is required to be reviewed by PEG.

3.5 REVISIONS TO COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION FORMS

(1) A Commercial Grade Dedication/Upgrade Evaluation shall not be revised if the changes to be made in any way affect the performance, form, fit, function, or materials of the item such that previously dedicated/upgraded items would no longer be satisfactory.

(2) Previous revisions of the Commercial Grade Dedication Evaluation shall be left complete for historical documentation. Changes made in a revision shall be indicated with a revision bar and triangle in the right hand margin. Revisions to a Commercial Grade Dedication/Upgrade Package shall include a completed Effects of Revision Form, Attachment 5, and shall be attached to the front of the Package. All revisions shall be stand-alone packages with the exceptions as noted in paragraph 3.5 (3) below.

(3) Administrative changes and corrections of typographical errors may be made by making a line through the error, initialing and dating the line, and adding the correct information in close proximity. These changes do not require a revision to the package.

A Commercial Grade Dedication/Upgrade package written on earlier revisions of the form, requiring minor changes, may be revised by:

- making a line through the change,
- adding the correct information,
- initialing and dating the change to the current revision level of the package, and
- identifying the change with a revision bar and triangle.

A new cover sheet and effects of revision sheet shall be attached to the cover and routed for the same level of approval as the original package.

(4) As part of the revision process, the Stock Item #, Master Commercial Grade Dedication Log, and Dedication/Upgrade phrase code file shall be changed to incorporate any necessary changes.

(5) Revisions to Commercial Grade Dedication/Upgrade Evaluations shall undergo the same review and approval process as a new evaluation.

3.6 UPGRADES OF ITEMS/SERVICES WITHOUT A COMMERCIAL DEDICATION/UPGRADE EVALUATION

(1) Items/services with simple acceptance processes may be upgraded on the basis of an Engineering Evaluation in the Purchase description provided the items listed in Section 3.2 (5) of this procedure are included in that description.

(a) Approval by PEG on the Requisition for the items to be upgraded indicates review and approval of the Upgrade Evaluation and acceptable criteria.

(2) Performance of items/services upgrade utilizing the Commercial Grade Dedication/Upgrade Evaluation shall be completed in accordance with this procedure.

4.0 RECORDS

(1) Commercial Grade Dedication/Upgrade Evaluations documented on Form NG-091Z (Attachment 1) shall be maintained in a fireproof file cabinet until microfilmed. Evaluations shall be maintained as records for the life of the plant or ISFSI, whichever is applicable.

(2) Upgrade Evaluations documented in the purchase order and/or Stock Item Description shall be maintained as part of the Procurement records in accordance with Quality Assurance procedures.

5.0 REFERENCES

(1) EPRI NP-5652, "Guideline for the Utilization of Commercial Grade Items in Nuclear Safety Related Applications (NCIG-07)"

(2) EPRI NP-6406, "Guidelines for the Technical Evaluation of Replacement Items in Nuclear Power Plants (NCIG-11)"

(3) EPRI NP-6629, "Guidelines for the Procurement and Receipt of Items for Power Plants (NCIG-15)"

(4) Code of Federal Regulations 10CFR21

(5) ANSI N45-2.13 – 1976

(6) ANSI N18.7 - 1976

(7) Code of Federal Regulations 10CFR50.49(L)

(8) ACP 102.9, "Environmental Qualification Program"

(9) ACP 1203.21, "Engineering Calculations"

(10) {C001} AR 94-0227

(11) {C002} AR 94-0116

(12) {C003} PAR 94-028; NG-94-3078

(13) {C004} NRC Inspection Report 92-201

(14) FPL-1 "Quality Assurance Topical Report" (QATR)

(15) DAEC-SC-PEG-01, "DAEC Technical Review and Approval of Requisitions"

(16) DAEC-SC-RIS-02, "DAEC Acceptance of Materials, Items, Services, and Components"

(17) ACP 1203.05, "DAEC Safety-Related List (Classification of Structures, Systems, and Components)"

(18) NUREG/ CR 6407, " Classification of Transportation Packaging and Dry Cask Fuel Storage System Components According to Importance of Safety"

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. (1) Revision (2) Page 1 of (3)

Signatures:

(4) Date
Responsible Engineer

(5) Date
EQ Reviewer

(6) Date
Seismic Reviewer

(7) Date
PEG Engineer

(8) Date
Supplier Assessment

Have Stock Item #, Dedication/Upgrade Phrase Code, and/or the Master Dedication Log been updated to reflect current rev. and a copy of the completed evaluation sent to QC?

Yes (9A) Initials

If there are differences between the old and new items being dedicated, do the Acceptance Criteria for the item contain a requirement for a MAT tag to be attached to the item which identifies differences between the old and new items (such as part number, material, etc.) and identifies affected MDL, UFSAR, or 10 CFR 72 drawings and documents.?

☐ Yes ☐ No **SAMPLE**

Reason: (9B)

Attachments:

Q-200 Code Data Sheet (10) Pages

Pages

Pages

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. **(1)** Revision **(2)** Page 2 of **(3)**

Section A **COMPONENT/ITEM**

Stock Item #: **(11)** -

Mfg. P/N: **(12)** Manufacturer: **(13)**

ITEM DESCRIPTION

(14)

Section B **APPLICATION**

What is the end use or final application of the item being dedicated/upgraded?

Describe or list plant I.D. or application: **(15)**

SAMPLE

Section C **REASON FOR DEDICATION/UPGRADE**

Type of Evaluation (check correct item): **(16)**

☐ Dedication (for use of an item as a basic component)
☐ If the item is to be dedicated, does it meet the requirements of the definition of a Commercial Grade item as defined in FPL-1 "Quality Assurance Topical Report" (QATR).
☐ Upgrade (for use of an item in an Augmented Quality application, that is not used as a 10 CFR 21 basic component)

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. (1) Revision (2) Page 3 of (3)

Section D **QUALIFICATION REQUIREMENTS** **SAMPLE**

*** ENVIRONMENTAL QUALIFICATION ***

Does this item/service require environmental qualification? ☐ YES ☐ NO (17)

If YES, list the governing document which establishes qualification:

(18)

If NO, provide the basis for why this item does not require environmental qualification:

☐ Item not required (CHAMPS EQ Data Field is N/A) to be in the EQ Program. (Attach CHAMPS Data Sheet)
☐ Item not susceptible to degradation in EQ harsh environment (Temperature, Pressure, Humidity, Radiation, Aging, etc.) Explain. _____ (19)
☐ Other (See attachment) _____

Basis: _____

*** SEISMIC QUALIFICATION ***

☐ Q-200 exists for the item being dedicated or its parent component and the Q-200 for the item does not require seismic qualification. (20)

!!! NO FURTHER EVALUATION NECESSARY !!!

☐ Q-200 exists for the item being dedicated and the Q-200 requires Seismic Qualification. (21)

Determine method which establishes qualification.

☐ Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section "G" for equivalency evaluation).
☐ Original seismic qualification document _____
☐ Seismic test/analysis as provided by this dedication evaluation. See Attachment _____

☐ Q-200 does not exist for the item being dedicated but does exist for its parent component and the parent requires seismic qualification. (22)

Determine method which establishes qualification.

☐ Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section "G" for Equivalency Evaluation.)
☐ Original seismic qualification document _____
☐ Seismic test/analysis as provided by this dedication evaluation. See Attachment _____.

Comments:

_____

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. **(1)** Revision **(2)** Page 4 of **(3)**

Section E **TECHNICAL REQUIREMENTS AND REFERENCES**

List all applicable technical references/standards required to evaluate the dedication/upgrade of this item.

ASME: **(23)** IEEE: _____

ANSI: _____ NFPA: _____

REG. GUIDE: _____ UL: _____

MIL. SPEC.: _____ TECH. SPEC.: _____

10 CFR 72 Licensing Basis Document: _____

UFSAR: _____ Other: _____

Section F **FAILURE MODES AND EFFECTS ANALYSIS** **SAMPLE**

Parent Item/Application Safety Function: **(24)**

Item Safety Function: **(25)**

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. (1) Revision (2) Page 5 of (3)

FAILURE MODE/MECHANISM	EFFECT	CRITICAL CHARACTERISTIC
(26)	(27)	(28)

Section G **EQUIVALENCY EVALUATION** **SAMPLE**

CHARACTERISTIC	ORIGINAL VALUE	REPLACEMENT ITEM VALUE	IS THIS VALUE ACCEPTABLE?
(29)	(30)	(31)	(32)

Basis for acceptance: (33)

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. (1) Revision (2) Page 6 of (3)

Section H **ENGINEERING EVALUATION**

(34)

Section I **SAMPLING PLAN SPECIFICATIONS**

(35) **SAMPLE**

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. (1) Revision (2) Page 7 of (3)

Section J

SELECTION OF CRITICAL CHARACTERISTICS AND ACCEPTANCE CRITERIA/METHOD

Method 1: ☐ Special Tests/Inspections and Standard Receipt Practices **(36)**

Critical characteristics to be verified by Method 1 will be indicated as such on the selection of critical characteristics and acceptance criteria/method worksheet and will include the specific acceptance criteria, including tolerances. Special tests, standard receipt inspection, post installation inspections will be identified. **SAMPLE**

Method 2: ☐ Commercial Grade Survey of Supplier **(37)**

List those critical characteristics required to be verified by the commercial grade survey.

Method 3: ☐ Source Verification **(38)**

List all critical characteristics requiring source surveillance and the applicable acceptance criteria.

Critical Characteristics	Acceptance Criteria

ATTACHMENT 1

COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. (1) Revision (2) Page 8 of (3)

SPECIAL TESTS/INSPECTIONS AND STANDARD RECEIPT PRACTICES

Will performance of test, inspections, or standard receipts require disassembly of item?

☐ Yes ☐ No **(39)** {C001} (Ref. 10)

CRITICAL CHARACTERISTIC	ACCEPTANCE CRITERIA* (INCLUDE TOLERANCES)**	PRE, POST, SPECIAL OR STANDARD TEST METHOD
PART NUMBER **(40)**	**(41)** **SAMPLE**	**(42)**

NOTES:

*All numerical values shall be specified in decimal form with the appropriate number of significant digits as determined by the responsible engineer. {C003} (Ref. 12)

**For purpose of determining conformance with the acceptance criteria, an observed (measured) value or a calculated value shall be rounded off in accordance with the round-off method of ASTM Practice E 29, "Using Significant Digits in Test Data to Determine Conformance with Specifications". {C003} (Ref. 12)

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

COVER SHEET

1. Enter the Commercial Grade Dedication/Upgrade number for this package. This number may be obtained from Supply Chain, PEG Group. Numbers should follow the following format, (D/U YYYY-XXX). The choice of a "D" or "U" indicates whether the package is a Dedication or an Upgrade evaluation. "YYYY" indicates the year and the "XX" is the next sequential number taken from the Master Dedication Log.

2. Enter the revision number of the package. This revision should correspond with the revision number in the Master Dedication Log.

3. Enter the total number of pages in this package. This should account for all attachments included in the body of the package. All pages should be numbered as follows: "Page #" of "the total number of pages."

4. The Responsible Engineer shall sign and date this section.

5. The EQ Reviewer shall sign and date this section if applicable.

6. The Seismic Reviewer shall sign and date this section if applicable.

7. The PEG Reviewer shall sign and date this section.

8. Supplier Assessment (SA) signature is optional when SA involvement is invoked, (i.e., Commercial Grade Survey or Source Surveillance, etc.) otherwise enter N/A in the SA signoff.

9A. The PEG Engineer shall initial the "Yes" to verify the Master Dedication Log, Stock Item #, and Dedication/Upgrade Phrase Code have been changed to reflect the current revision of this package and to verify that a copy of the completed and signed Evaluation has been sent to Receipt Inspection.

9B. The PEG Engineer shall provide notification to the end user of the dedicated item via MAT tag attached to the item which identifies differences between the old and new items (such as part number, material, etc.) and identifies affected MDL, UFSAR, or 10 CFR 72 drawings and documents.

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

10. Enter the description of any attachment included in the body of this package and list its number of pages. Attachment of a Q-200 Code Data Sheet is required if one exists for either the item being dedicated or its parent component. The page number of all attachments shall be indicated by "Page" of "Total Number of Pages." Multiple Q-200 data sheets are not required if the Q-200 codes are identical.

SECTION A.

11. Enter the Stock Item Number for this item. The Stock Item # can be obtained from MMS. If a Stock Item # does not exist or one is being assigned at a later date, N/A or leave blank. The Stock Item # may be entered at a later date without a revision.

    "Various" may be entered when using this Dedication/Upgrade Package for the evaluation of commodity items.

12. Enter the Manufacturer's part number of the item being dedicated. If the item is not identified by a part number by the Manufacturer, a model number or other manufacture designated number may be substituted. When this is the case, properly identify the number (e.g., model, drawing, etc.).

    "Various" may be entered when using this Dedication/Upgrade Package for the evaluation of commodity items.

13. Enter the name of the Manufacturer of the item being dedicated/upgraded.

14. Enter a concise description of the item for which this Evaluation is being performed.

SECTION B.

15. Provide a concise description of the application for which this Commercial Grade Dedication/Upgrade Evaluation is being performed. If the items are being dedicated for use in a specific plant/ISFSI equipment, provide a list of all Equipment IDs in which the item may be applied.

    When this Evaluation is being performed for commodity items, this statement or similar statement shall be used: "These commodity items are used in 10 CFR 21 basic component applications throughout the DAEC facility. These items may not be used in EQ applications."

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

SECTION C.

16. Check the type of Evaluation to which this package applies:

    * Commercial Grade Dedication - The item/service meets the definition of a Commercial Grade Item and is being purchased for use as a basic component by DAEC.

    * Upgrade - The item/service meets the definition of Commercial Grade Item and is being purchased for use in an Augmented Quality Application that is not a 10 CFR 21 basic component application.

SECTION D.

* All items, with the exception of ECP items, require a Q-200 Code Data Sheet for the parent component. This is necessary for the determination of the safety function and seismic impact of the item. If there are multiple applications with identical Q-200 Safety Functions, a typical Q-200 Data Sheet representing all applications can be included in the package in lieu of all the Q-200 Data Sheets. Parent component items for ECPs should have their safety function listed within the ECP Package.

* When the Dedication/Upgrade Evaluation is being used for commodity items, this Section is required to be completed. This Section will be representative of the most restrictive application.

17. Check either "Yes" or "No" if the item is required to meet Environmental Qualification.

    * For items being dedicated that have their own Plant I.D. number, Environmental Qualification should pertain to that part.

    * For items that are being dedicated that do not have their own Plant I.D. number (subcomponents of parent items), Environmental Qualification should pertain to the parent item.

      Applicability to Environmental Qualification can be found on the Equipment Data Screen of "CHAMPS".

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

18. If the answer to (17) is "Yes", then reference the document which establishes Environmental Qualification. This information can readily be found from the Long Term Program Group.

19. If the answer to (17) is "No", then provide justification as to why the item does not require Environmental Qualification. In the case of some subcomponents, a detailed justification of why an item does not require an EQ Evaluation may be necessary.

20. Check this section only if the Q-200 Code Data Sheet identified for the item being dedicated or its parent component does not require Seismic Qualification. Checking this section indicates that no further evaluation is required and the Responsible Engineer should proceed to Section "E".

21. In most instances this section will only be checked when the item being dedicated has its own unique Plant identifier. Check this section only if the Q-200 exists for the item being dedicated and requires Seismic Qualification. This would be indicated by a Q-200 Code that specifies Seismic Requirement in its Code.

    Example: 3 C 1 B P The "1" in this Code requires this part to be Seismic Category 1.

    If this section is checked, then one of the three following questions as a minimum must be answered.

    1. Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section "G" for Equivalency Evaluation.)

    Check this section if the item being replaced has similar critical characteristics (i.e., weight, dimensions, or other characteristics critical to the Seismic Qualification of the item) as determined from the Equivalency Evaluation performed in Section "G" of this procedure.

    2. Original Seismic Qualification Document _____.

    Check this section if the Seismic Qualification of the item being dedicated is acceptable based on the original Seismic Qualification Document and it is equivalent.

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

3. Seismic test/analysis as provided by this Dedication Evaluation. See Attachment _____.

Check this section if the item being dedicated is not similar in fit, form or function to the original item being replaced and a Seismic Evaluation is required by this Dedication Package to seismically qualify the item.

22. Check this section only if the Q-200 does not exist for the item being dedicated, but does exist for the item's parent component and requires Seismic Qualification.

An example would be when a shaft for 1P022A is being dedicated. The shaft does not have a Q-200 Code Data Sheet; however, 1P022A does.

If this section is checked, then one of the three following questions must be answered.

1. Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section G for Equivalency Evaluation.)

Check this section if the item being replaced has similar critical characteristics (i.e., weight, dimensions, or other characteristics critical to the seismic qualification of the item) as determined from the Equivalency Evaluation performed in Section G of this procedure.

2. Original Seismic Qualification Document _____.

Check this section if the Seismic Qualification of the item being dedicated is acceptable based on the original Seismic Qualification Document and it is equivalent. Explain basis.

3. Seismic test/analysis as provided by this Dedication Evaluation. See Attachment _____.

Check this section if the item being dedicated is not similar in fit, form or function to the original item being replaced and a seismic evaluation is required by the Dedication Evaluation to seismically qualify the item.

The Comments Section provided to be utilized for question 20, 21 or 22.

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

SECTION E.

23. Identify and list applicable technical references and/or standards that are required as part of the Dedication Evaluation of this item. This is important for items that have no known technical or quality requirements identified. This section is also used as a basis for determining the requirements of Section F.

SECTION F.

24. Give the specific safety function(s) that the parent item/application is required to perform. The safety function of the item should be in accordance with the Definition Section of this procedure. The use of the Q-200 Code Data Sheet or ECP Package should be utilized in determining the safety function of the item.

    Lines 24, 25, 26, 27 and 28 need not be completed for Upgrade items. These lines should have an "N/A" entered here.

    When this evaluation is being performed for commodity items, this section should reflect the most restrictive safety-related or important to safety application in which this item is applied.

25. Identify the safety function(s) of the item being dedicated. This is any function of the item/subcomponent that could prevent the parent item/application from performing its safety function. This determination should be substantiated by the use of vendor drawings, manuals, catalogs, etc.

    If this item is the same as the parent item/application, then enter a statement such as "This item is the same as the parent item/application."

26. List any credible/non-credible failure modes/mechanisms of the item being dedicated which would stop the item from performing its intended safety function.

    Failure modes associated through human error should not be considered.

    Any failure that is considered non-credible should be identified as such and annotated by "Non-Credible".

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

27. For each credible failure mode/mechanism identified in the "Failure Modes/Mechanisms Column", list the effect that failure will have on the parent component or plant/ISFSI

28. Identify the critical characteristic "Measurable Attribute/Variable" that is directly related to the failure mode identified in the Failure Mode/Mechanism Column. Only credible failure modes should have a critical characteristic identified. Reference Attachment 3 for critical characteristic examples.

SECTION G.

NOTE

This section is not required to be completed when the evaluation is for a commodity item, an item evaluated for an Engineered Maintenance Action or Supplier Deviation Disposition Request. An "N/A" should be entered in this case.

29. List the characteristics applicable to the item being dedicated that are unique to the item and are critical to the safety function of the item (fit, form and function). These characteristics should be determined by having a thorough knowledge of the item's safety function with the parent component or application. Plant/ISFSI reference materials or vendor contact should be utilized to obtain these characteristics. The following are examples of characteristics that may be used in this section: materials of construction, method of construction, dimensions, function/operability, voltage/wattage rating, amperage, pressure rating, weight, etc. Reference Attachment 6 for guidelines for maintaining Seismic and Environmental Qualification.

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

30. Determine the original values for each characteristic identified in step 29. These values should be derived from original purchase specifications, drawings, catalogs, etc. that reflect the original or revised design configuration of the item being dedicated. If the information is not available to make this determination, then the values for these characteristics should be established from the technical requirements listed in Section E.

31. Enter the replacement item's value for each identified characteristic and original value. These values are obtained from the current vendor specifications, drawings, etc.

32. Identify by a "Yes" or "No", whether the replacement item value is acceptable in comparison to the original value.

33. Provide a basis summarizing the acceptability of differences of any values. If an Engineering Determination is required for any of these value differences, attach written justification as an attachment to the package.

SECTION H.

34. This section should provide an overview of how the item/service applies to its application. Provide in detail those characteristics that were considered from a design point of view that are essential for the item to perform its safety function. This should include those properties or attributes (material, dimensions, processes, mechanical and electrical functional attributes) which are essential for the item's fit, form, and function. Provide a justification for the selection of critical characteristics chosen for acceptance of this item. This should include critical characteristics selected from the Failure Modes Effects Analysis (Section F), the Equivalency Evaluation (Section G) and critical characteristics of design determined in this section. Provide an explanation as to which method is being used to verify those characteristics chosen for the acceptance of the item/service.

SECTION I.

35. If a sampling plan is required to verify critical characteristics of large quantity orders, then details of the sampling plan/procurement specification need to be specified to ensure complete lot homogeneity. The sampling test plan shall be in compliance with ACP 1415.3.

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

SECTION J.

36. Check Method 1 if standard receipt inspection or special tests are required. Special testing requires that a testing procedure similar to Attachment 4 be used, dependent on the complexity of the test.

    When an item is required to have third party testing, this test procedure is not required.

    If Method 1 is checked, each critical characteristic must be listed on the Special Tests/Inspections and Standard Receipt Practices Sheet. Identify the method in which each critical characteristic must be inspected.

37. Check Method 2 if a Commercial Grade Survey is being used as acceptance for an identified critical characteristic.

    List those critical characteristics for acceptance by Method 2. Verify that those characteristics identified were actually verified in the Commercial Grade Survey.

38. Check Method 3 if a Source Verification is required for the acceptance of any critical characteristic. List critical characteristics and acceptance criteria.

39. Check "Yes" or "No" as applicable. Disassembly includes, but is not limited to removal and reinstallation of any parts on the item. QC should be consulted if it is not clear whether they can perform a test, inspection, or receipt without disassembly. {C001}

40. List those critical characteristics chosen by Method 1 to give reasonable assurance that the item ordered was the item received and that it will meet its technical, functional, and intended safety function requirements.

    This section should include important characteristics for items being upgraded to higher quality status.

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

41. Identify the acceptance criteria for the critical characteristics listed in the critical characteristic column. This acceptance criteria should be attributes associated with applicable design documents (i.e., drawings, vendor manuals, catalogs, etc.). In some instances, it may be necessary to contact the supplier or manufacturer to request written or verbal criteria. This is acceptable as long as this information is documented by a Record of Conversation or written communication and is stored with the Dedication Package. When no information is available, alternate critical characteristics should be considered or good engineering judgment should be administered to ensure that the item being dedicated will perform its intended safety function. Applicable codes, standards, etc., may be used to obtain this information.

    If applicable, acceptance should list the tolerances associated with the acceptance criteria. The following dimensional tolerance should be used as guidance for defining acceptance criteria tolerances any time the tolerance is not given by the original equipment manufacturer, engineering, a drawing of the item or when the dimensions given are "nominal".

    Angular

    ± 0 degrees 30'

    Linear Decimal

    1 place: .x ± 0.1"

    2 places: .xx ± 0.01"

    3 places: .xxx ±0.005"

    Linear Fractional

    ± 1/64" (suggested tool: 1/64" increment ruler)

ATTACHMENT 2

SPECIFIC INSTRUCTIONS FOR COMPLETING THE DEDICATION/UPGRADE EVALUATION

42. Identify the acceptance method that is required for the acceptance of the critical characteristic.

NOTE

Section size and page numbering may be altered to facilitate required space for basis, Engineering Evaluation, etc.

ATTACHMENT 3

TYPICAL CRITICAL CHARACTERISTICS

Product Identification

- Color Coding
- Display Type (scale, graduations)
- Enclosure Type
- Industry Standard Markings
- Nameplate Data
- Part Number/Unique Identifier

Physical Characteristics

- Balance
- Capacitance
- Cloud Point
- Coating
- Color
- Composite Material Hardness
- Concentration
- Conductivity
- Continuity
- Density/Specific Gravity
- Dielectric Strength
- Dimensions (to within manufacturer's tolerance)
- Drop Point
- Ductility
- Durometer Hardness
- Elasticity
- Fatigue Resistance
- Flammability
- Flash Point
- General Configuration or Shape
- Homogeneity
- Inductance
- Leachable Halogen Content
- Luminescence
- Material of Construction
- Oil/Water Separating
- Permeability
- Plating
- Polarity
- Pour Point
- Purity
- Resilience
- Resistance
- Solubility
- Spring Constant
- Surface Finish
- Surface Hardness
- Tensile Strength
- Torque
- Viscosity
- Weight

Performance Characteristics

- Accuracy
- Burn-in Endurance
- Chatter
- Current Rating
- Cycle Time
- Deadband Width
- Flow Rate
- Gain
- Horsepower
- Input/Output Voltage
- Interrupt Rating
- Interrupting Current
- Leakage
- Load Rating
- Open/Closure Time
- Operability (fail open/close, stroke)
- Operating Range
- Performance During Under Voltage Conditions
- Pick-up/Drop-out Voltage
- Pressure Drop
- Pressure Rating
- Repeatability
- Ride Out
- Rotational Direction
- Setpoint Stability (No Drift)
- Speed
- Time/Current Response
- Voltage Rating
- Power Rating

ATTACHMENT 3

TYPICAL CRITICAL CHARACTERISTICS

Commercial Grade Item	Critical Characteristics: (a)
Bearing	Configuration, dimensions, load rating, material, model number
Bolting	Configuration, dimensions, pitch, material, tensile strength, hardness, plating
Terminal Block	Configuration, voltage rating, current rating, materials, dielectric strength
Crimped Terminal Connector	Configuration, material, dimensions (wire, size, ring tong size), voltage rating, continuity, tensile pullout strength, color
Relay	Configuration, pick-up/drop-out voltage, voltage rating, current rating, chatter, response time
Fuse	Configuration, current rating, interrupt rating, time/current response, dimensions
Resistor	Configuration, markings, resistance, power rating
Drive Belt	Dimensions, cross-sectional shape, ride's, fatigue resistance, load rating, material, tensile strength
Spiral Wound Gasket	Configuration, dimensions, markings, style number, materials (filler and windings), pressure rating, leachable halogens, spiral density
Pressure Switch	Configuration, dimensions, material (pressure retaining parts), voltage rating, response time, accuracy nameplate data, pressure range, wire rating, enclosure type, dielectric strength (insulation), deadband width
Temperature Switch	Configuration, dimensions, material, voltage rating, response time, accuracy, nameplate data, temperature range, wire rating, enclosure type, dielectric strength (insulation), deadband width
Lubricating Grease/Oil	Color, specific gravity, viscosity, drop point, cone penetration, pour point, chemical composition, cloud point
Fuel Oil	Density, flash point, cloud point, pour point, cinematic viscosity, chemical composition
Framing Device	Configuration, shape, dimensions, material, tensile strength, coating
Material (e.g., Plate, Angle)	Dimensions, shape, material, tensile strength, hardness, ductility, markings, coating

(a) Part number is a critical characteristic for each item.

NOTES: 1. These potential critical characteristics are provided for illustration only.

2. The lists are not intended to be all-inclusive or exclusive of critical characteristics which may be deemed important by the purchaser.

ATTACHMENT 3

TYPICAL CRITICAL CHARACTERISTICS

Commercial Grade Item Application (a)	Critical Characteristics (b)
Valve Seal Ring (ECCS Globe Valve)	Configuration, material, dimensions, finish, leakage
Integrated Circuit (RPS)	Configuration, gain, input/output impedance, frequency responses, operability
Pressure Transmitter (MSIV Air Accumulator)	Configuration, voltage rating, current output, pressure rating, materials, accuracy
Control Switch (Reactor Bldg. Sump Reset	General configuration, contact configuration, voltage rating, current rating, materials, dimensions, operability
Transmitter (Uninterrupted Power Supply)	Markings, gain, input/output impedance, current rating, voltage rating, operability
Valve Stem (Active, low pressure cooling system globe valve, seismically & environmentally qualified)	Configuration, dimensions, material, tensile strength, ductility, finish, markings, hardness
Pump impeller (Make-Up Water Transfer Pump)	Configuration, dimensions, material, hardness, balance, flow rate
Motor (Cooling Room Fan)	Nameplate data (horsepower, speed), insulation class, frame size, materials, weight, shaft type, coupling type, bearing types
Non-metallic Diaphragm (Air operator for a globe valve, seismically & environmentally qualified)	Configuration, dimensions, material, derogate hardness, reinforcement material
Solenoid Valve (Torus Vacuum Breaker)	Configuration, size, pressure rating, materials, voltage rating, current rating, coil class, open/closure time
Limit Switch (Electric motor operator for a gate valve, seismically & environmentally qualified	Configuration, dimensions, material (metallic & non-metallic), markings, operability, voltage rating, current rating
Impeller Key (Aux. Feedwater Pump)	Configuration, dimensions, material, hardness
Spring (Pressure relief valve, seismically qualified)	Configuration, dimensions (free length, coil diameter), spring rate, finish

ATTACHMENT 3

TYPICAL CRITICAL CHARACTERISTICS

Commercial Grade Item (Application) (a)	Critical Characteristics (b)
Valve Packing Gland (Active control valve, seismically qualified)	Configuration, dimensions, material, tensile strength, hardness, finish
Filter Regulator Assembly (High Pressure Control Valve, seismically qualified)	Configuration, dimensions, materials, flow rate, pressure range, pressure rating, temperature rating, filter micron size
Pinion Gear (Spent Fuel Bridge Crane Hoist)	Configuration, dimensions, material, hardness, pitch
Crane Wheel Axle (Spent Fuel Bridge Crane)	Configuration, dimensions, material, tensile strength, hardness, finish
Shaft Coupling (Diesel Generator)	Configuration, dimensions, materials, hardness
Anchor Bolt (Seismically Qualified Concrete Anchor)	Configuration, dimensions, material, wedge hardness, pitch

ATTACHMENT 4

SAMPLE TEST PROCEDURE

Sample Test Procedure

(Current Capability Dedication Test)

1.0 TITLE

(XXXXXXXXX)

2.0 PURPOSE

The purpose of this procedure is to verify the current attributes of terminal/fuse blocks.

3.0 TEST EQUIPMENT

3.1 An appropriate current source that can be verified from 0 to 30 amps.

3.2 A meter capable of monitoring the current source output.

Meter Used _____ Cal. Due Date_____

4.0 PROCEDURE

4.1 Assemble the required number of terminal/fuse blocks on mounting tracks.

4.2 After terminal/fuse blocks are assembled, jumper on alternate side between terminals from current source using appropriate size wire.

4.3 Connect the current source and meter to the terminal/fuse blocks being tested.

4.4 By varying the current source from 0 to 30 amps, maintain rated amperage for 15 minutes.

5.0 ACCEPTANCE

5.1 No visible deterioration followed by successful dielectic test.

6.0 TEST DATA

Current Applied_____Number Accepted_____

Number of Failures_____

Comments:_____

7.0 PERSONNEL

Performed By:_____Date:_____

QC Inspector:_____ Date:_____

ATTACHMENT 5

EFFECTS OF REVISION FORM

EFFECTS OF REVISION

Dedication/Upgrade Package No. _____ Revision _____

Reason for Revision **SAMPLE**

_____

_____

_____

_____

1. Does this revision affect the purchase description contained in the Stock Item # or Phrase Code? ☐ Yes ☐ No

   If yes, revise the purchase description.

2. Do items in the Warehouse dedicated to previous revisions of this Dedication Package require additional testing/inspection? ☐ Yes ☐ No

   If yes, initiate an Action Request (AR) on the items.

3. Do items installed in the plant/ISFSI dedicated to previous revision of this Dedication Package require additional testing/inspection? ☐ Yes ☐ No

   If yes, initiate an AR on the items.

4. Does this revision require that a MAT tag be attached to the item which identifies differences between the old and new items (such as part number, material, etc.) and identifies affected MDL, UFSAR, or 10 CFR 72 drawings and documents.? ☐ Yes ☐ No

ATTACHMENT 6

MAINTAINING SEISMIC AND ENVIRONMENTAL QUALIFICATION

If a commercial grade item is intended for installation in a seismically or environmentally qualified component, the purchaser should be reasonably assured that the item, once installed, will not adversely affect the original qualification of the component. This assurance can be obtained by performing a technical evaluation and by accepting the item utilizing any of the four acceptance methods provided in this guideline.

F.1 ENVIRONMENTAL QUALIFICATION

F.1.1 Harsh Environment

For devices requiring environmental qualification, the identification and verification of material type or composition of non-metallic parts such as lubricants, O-rings, gaskets, seals and packing should be evaluated. The use of improper non-metallic material could result in material decomposition, degradation, and failure after exposure to harsh environments. Acceptance of such commercial grade items should include verification of correct materials of construction since they are critical to performance.

F.1.2 Mild Environment

The threshold of radiation temperature and humidity deterioration for non-metallic materials is normally above the level encountered in a mild environment (References 7 and 8). Thus, for non-metallic commercial grade items installed in components located in a mild environment, material verification should not be necessary.

The need for material verification should be evaluated if the material is critical from a functional standpoint (e.g., potential degradation of an incorrect material by lubricants) or the parent component is subject to equipment qualification requirements.

F.1.3 Seismic Qualification

The purchaser should reasonably assure that the commercial grade item will not adversely affect the original seismic qualification of the parent component in which they are intended for installation. Reasonable assurance for a simple metallic item can typically be achieved by verifying three critical characteristics - part number, material of construction, and dimensions. Verification of these characteristics will generally ensure that the mass, its distribution, and the strength of the item are identical to the original item.

ATTACHMENT 6

MAINTAINING SEISMIC AND ENVIRONMENTAL QUALIFICATION

For more complex items, modifications made to internal piece-parts may result in a redistribution of mass. Changes in assembly or types of materials should also be considered for complex items. These modifications could all adversely affect the way in which the item reacts during a seismic event. Therefore, the verification of design controls, modifications to internal part characteristics, and assembly procedures should be considered if maintaining seismic qualification is an issue.

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. D2008-004 Revision 0 Page 1 of ~~17~~ 16

Signatures:

Charlie Zalewski — Date 5/8/2008
Responsible Engineer

N/A — Date
EQ Reviewer

Date 5-8-08
ASME Reviewer

N/A BT 5/8/08 — Date
Seismic Reviewer

Date 5/8/08
PEG Engineer

Date
Supplier Assessment (as applicable)

Have Stock Item #, Dedication/Upgrade Phrase Code and/or the Master Dedication Log been updated to reflect current rev. and a copy of the completed evaluation sent to QC?

Yes X Initials CED

If there are differences between the old and new items being dedicated, do the Acceptance Criteria for the item contain a requirement for a MAT tag to be attached to the item which identifies differences between the old and new items (such as part number, material, etc.) and identifies affected MDL, UFSAR, or 10 CFR 72 drawings and documents.?

☐ Yes ☒ No Reason: _____

Attachments:

1. Pressure Integrity Test — Pages 9 of ~~17~~ 16 CED 5/8/08
2. Q-200 Code Data Sheets for HBD-080, HBD-081, 1E053A 1E053B — Pages 10 ~~of 17~~ Thru 13 14 of ~~17~~ 16
3. SOLAR Turbine Drawing 09-600-C1 (M015-022-1) — Pages 14 ~~15~~ of ~~17~~ 16
4. "Supplimentary Quality Assurance Requirements " Attachment to BECH-MRS-M015 Page 3 of 3 — Pages 15 ~~18~~ of ~~17~~ 16
5. Badger Industries Engineering Report for Purchase Order K122907 — Pages 16 ~~17~~ of ~~17~~ 16

Distributed document C.2

Section A **COMPONENT/ITEM**

Stock Item #: N/A

Mfg. P/N: 09-600-8 Manufacturer: BADGER INDUSTRIES

ITEM DESCRIPTION: EXPANSION BELLOWS FOR EMERGENCY DIESEL GENERATOR 1G031/1G021 SKID HEAT EXCHANGER OUTLET CONNECTIONS TO EMERGENCY SERVICE WATER.

Section B **APPLICATION**

What is the end use or final application of the item being dedicated/upgraded?

EMERGENCY DIESEL GENERATOR 1G031/1G021 SKID HEAT EXCHANGER OUTLET CONNECTIONS TO EMERGENCY SERVICE WATER

Describe or list plant I.D. or application:

Piping components connecting HBD-080 and 1E053A

Piping components connecting HBD-081 and 1E053B

Section C **REASON FOR DEDICATION/UPGRADE**

Type of Evaluation (check correct item):

☒ Dedication (for use of an item as a basic component)

☐ If the item is to be dedicated, does it meet the requirements of the definition of a Commercial Grade item as defined in FPL-1 "Quality Assurance Topical Report" (QATR).

☐ Upgrade (for use of an item in an Augmented Quality application, that is not used as a 10 CFR 21 basis component)

Section D

QUALIFICATION REQUIREMENTS

*** ENVIRONMENTAL QUALIFICATION ***

Does this item/service require environmental qualification? ☐ YES ☒ NO

If YES, list the governing document which establishes qualification:

If NO, provide the basis for why this item does not require environmental qualification:

☒ Item not required (CHAMPS EQ Data Field is N/A) to be in the EQ Program. (Attach CHAMPS Data Sheet)

☐ Item not susceptible to degradation in EQ harsh environment (Temperature, Pressure, Humidity, Radiation, Aging, etc.) Explain. _____

☐ Other (See attachment) _____

Basis:

*** SEISMIC QUALIFICATION ***

☐ Q-200 exists for the item being dedicated or its parent component and the Q-200 for the item does not require seismic qualification.

!!! NO FURTHER EVALUATION NECESSARY !!!

☐ Q-200 exists for the item being dedicated and the Q-200 requires Seismic Qualification.

Determine method which establishes qualification.

- ☐ Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section "G" for equivalency evaluation).
- ☐ Original seismic qualification document
- ☐ Seismic test/analysis as provided by this dedication evaluation. See Attachment _____

☒ Q-200 does not exist for the item being dedicated but does exist for its parent component and the parent requires seismic qualification.

Determine method which establishes qualification.

- ☒ Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section "G" for Equivalency Evaluation.)
- ☒ Original seismic qualification document M015-104
- ☐ Seismic test/analysis as provided by this dedication evaluation. See Attachment _____.

Comments:

The weight of the bellows is comparable to the original and therefore no change in the seismic requirements. These items are considered seismically rugged for nuclear power plants.

Section E **TECHNICAL REQUIREMENTS AND REFERENCES**

List all applicable technical references/standards required to evaluate the dedication/upgrade of this item.

ASME:	N/A	IEEE:	N/A
ANSI:	B31.1	NFPA:	N/A
REG. GUIDE:	N/A	UL:	N/A
MIL. SPEC.:	N/A	TECH. SPEC.:	3.8
		10 CFR 72 Licensing Basis Document:	N/A
UFSAR:	8.3.1.1.2.3, 9.2.3.2.2	Other:	BECH-MRS-M015
			M015-022-1 (09-600-8)

Section F **FAILURE MODES AND EFFECTS ANALYSIS**

Parent Item/Application Safety Function:

SYSTEM PRESSURE BOUNDARY

Item Safety Function:

SYSTEM PRESSURE BOUNDARY

FAILURE MODE/MECHANISM	EFFECT	CRITICAL CHARACTERISTIC
FATIGUE	FRACTURE - LOSS OF PRESSURE BOUNDARY INTEGRITY	MATERIALS DIMENSIONS CONFIGURATION

Section G

EQUIVALENCY EVALUATION

CHARACTERISTIC	ORIGINAL VALUE	REPLACEMENT ITEM VALUE	IS THIS VALUE ACCEPTABLE?
Flange Material	ASTM A105 (Note: Dwg 09-600-8 indicates ASTM A181)	ASTM A105	YES *
Flange Dimensions	Per ANSI B16.5 Class 150 RF Slip-On Flange	Per ANSI B16.5 Class 150 RF Slip-On Flange	YES
Bellows Material	ASME SA240 T321	ASME SA240 T321	YES
Bellows "OD" Dimension Ref: Attachment 3	8.27" Nominal	8.27" Nominal	YES
Bellows "ID" Dimension Ref: Attachment 3	6.69" Nominal	6.69" Nominal	YES
Weld Strip Material	18-8	ASME SA240 T321	YES *
Expansion Joint Overall Length	9.75 +0 -1/16"	9.75 +0 -1/16"	YES
Part Number	09-600-8	09-600-8 (model 6-SMF-SF1)	YES
Pressure Test	Air & Soap Bubble Test @ 1 ATM.	150% of 50 psig Design Pressure = 75psig	YES

Basis for acceptance:

The Fit, Form, and Function of the replacement expansion joint are equivalent to the original component.

- Per BECH-M190, ASME SA105 is an acceptable alternative material to ASME SA181.
- Weld Strip Material to be evaluated by EMA

Section H

ENGINEERING EVALUATION

An expansion joint is a device used to allow movement in a piping system while containing pressure and the medium running through it. Frequently, thermal growth, equipment movement, vibration or pressure pulsation can cause movement in a piping system. The expansion joint aids in creating flexibility for this movement. There are four basic movements that can be applied to a bellows. These are Axial, Lateral, Angular and Torsional. Bellows behave like springs in a piping system. When they are compressed, they resist the movement the same as a spring would. The spring rate of a bellows is entirely dependent on bellows geometry and material properties. This piping connection for these joints is slip-on flanges, raised face, rated at 150#. The subject expansion bellows is to be used for supplying cooling water to the Standby Diesel Generator. The original technical specification requires that there be an expansion bellows between the plant piping and the piping supplied on the Diesel. The drawing, M015-022-1 established the original dimensions and material requirements for the bellows. Attachment 4 defines the supplementary quality requirements for the expansion joint, no material requirements were stated. The original bellows was designed by Solar Turbine which has since been purchased by Badger Industries. There were no code requirements associated with the original expansion joint. The safety function of the bellows is system pressure boundary. The non-safety related function of the bellows is movement.

Critical characteristics for design of the bellows are material of construction, dimensions, pressure test and configuration. Materials are chosen to assure adequate strength of the bellows. Dimension and configuration are chosen to assure proper fit alignment of the Diesel and plant piping. The pressure test will assure the bellows can with stand the pressures at the Diesel Generator Heat exchanger. Critical characteristics selected for acceptance are: part number, dimensions, configuration, material and pressure test. Part number verification will give reasonable assurance that the proper item was received. Verification of the dimensions and configuration will give reasonable assurance that the bellows will fit. Verification of material will give reasonable assurance that the correct material was received.

The weight of the bellows is comparable to the original and therefore no change in the seismic requirements. These items are considered seismically rugged for nuclear power plants.

This dedication package will be a combination of method 1 and method 3. The supplier is providing two expansion joints. The first expansion joint will be manufactured and sent directly to DAEC. An initial receipt inspection will be performed (dimensions, hydrotest). The second unit will be manufactured under the observation of the Procurement Quality group for method 3. The method 3 Source Verification will review material traceability, dimensional criteria and welding procedures/qualification for both units and a pressure test for the second unit. Based upon successful verification under method 3 and a successful receipt inspection, the first unit will be dedicated.

The method 3 verification will validate that the supplier has adequate material controls and material certification such that reasonable assurance exists that item will meet the pressure boundary requirements, that the dimensions and configuration meet the drawing requirements and that the supplier pressure test is performed properly and validates the pressure integrity of the unit.

Successful completion of these dedication requirements will provide assurance that when installed the Expansion joint will perform its intended safety related function.

Section I

SAMPLING PLAN SPECIFICATIONS

100%

Dedication/Upgrade No. D2008-004 Revision 0 Page 7 of 16

Section J

SELECTION OF CRITICAL CHARACTERISTICS AND ACCEPTANCE CRITERIA/METHOD

Method 1: ☒ Special Tests/Inspections and Standard Receipt Practices

Critical characteristics to be verified by Method 1 will be indicated as such on the selection of critical characteristics and acceptance criteria/method worksheet and will include the specific acceptance criteria, including tolerances. Special tests, standard receipt inspection, post installation inspections will be identified.

Method 2: ☐ Commercial Grade Survey of Supplier

List those critical characteristics required to be verified by the commercial grade survey.

Method 3: ☒ Source Verification

List all critical characteristics requiring source surveillance and the applicable acceptance criteria.

Critical Characteristics	Acceptance Criteria
Material Verification	Materials meet requirements of drawing 09-600-8 and are traceable to CMTRs
Dimensional Criteria	Meets requirements of Dwg. 09-600-8 and Supplier Design Drawing
Pressure Test	50 psig X 1.5 = 75 psig

SPECIAL TESTS/INSPECTIONS AND STANDARD RECEIPT PRACTICES

Will performance of test, inspections, or standard receipts require disassembly of item?

☐ Yes ☒ No {C001} (Ref. 10)

CRITICAL CHARACTERISTIC	ACCEPTANCE CRITERIA* (INCLUDE TOLERANCES)**	PRE, POST, SPECIAL OR STANDARD TEST METHOD
PART NUMBER	09-600-8/Model 6-8MF-SF1	STANDARD
OVERALL DIMENSIONS OF EXPANSION JOINT	"INSTALLED FREE LENGTH" of 9 ¾" (+0 -1/16") PER BADGER ENGINEERING REPORT (ATT.#5)	STANDARD
FLANGE DIMENSIONS	NOMINAL DIMENSIONS PER ANSI B16.5 CLASS 150, RF, SLIP-ON FLANGE	STANDARD
ACCEPTABLE RELEASE OF SOURCE VERIFICATION	VERIFY RECEIPT OF "FPL/FPLE QA SURVEILLANCE RELEASE" FORM	STANDARD
FLANGE OD	11" NOMINAL	STANDARD
DIAMETER OF BOLT HOLES	7/8" NOMINAL	STANDARD
NUMBER OF BOLT HOLES	8	STANDARD
BOLT CIRCLE DIAMETER	9 ½" NOMINAL	STANDARD
CONFIGURATION	PER BADGER ENGINEERING REPORT (ATT#5) AND SOLAR DRAWING 09-600-8	STANDARD
PRESSURE TEST	VERIFY ACCEPTABLE PRESSURE INTEGRITY TEST PER ATTACHMENT 1	SPECIAL

NOTES:

*All numerical values shall be specified in decimal form with the appropriate number of significant digits as determined by the responsible engineer. {C003} (Ref. 12)

**For purpose of determining conformance with the acceptance criteria, an observed (measured) value or a calculated value shall be rounded off in accordance with the round-off method of ASTM Practice E 29, "Using Significant Digits in Test Data to Determine Conformance with Specifications". {C003} (Ref. 12)

PRESSURE INTEGRITY TEST RESULTS ACCEPTANCE PAGE
ATTACHMENT #1

1.0 Title

1.1 Pressure Integrity Test Results Acceptance Form

2.0 Purpose

The purpose of this form is to verify the expansion joint pressure integrity, which will be 150% of system design pressure of 50 psig. The pressure test will assure the bellows can withstand the pressures at the Diesel Generator Heat exchanger

3.0 SAMPLE SIZE:

100% of all expansion joints.

4.0 TEST EQUIPMENT

2 6" 150# Blind Flanges, one with piping connections for pressure injection. Supply of Potable Water and Hydro Pump capable of pressurizing to 100 psig. Indicating pressure gauge. Gauge shall have dial graduated over a range of at least 1.5 times, but not more than 4 times the intended maximum test pressure (78 psig).

5.0 PROCEDURE

NOTE, per the supplier the shipping restraints are not to be relied upon to hold pressure during testing. All thread rod through flange bolt holes should be used for restraint of the flanges. The shipping restraints may be removed.

QC shall witness the testing of the expansion joint. Per the following instructions:

1. Connect the water supply to the pressure injection point, increase pressure to 75 PSIG (-0, +3 PSIG). Hold time 10 (ten) minutes minimum.

6.0 ACCEPTANCE CRITERIA:

Successful completion of the test. No pressure leaks.

7.0 M&TE Equipment

7.1 M&TE USED: _____ Cal Date: _____

8.0 Personnel

8.1 Performed By: _____ Date: _____

8.2 The Quality Control Inspector has witnessed the pressure test and verified a successful test.

87.3 QC Inspector _____ Date: _____

Comments:

_____

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: HBD080 SUS: 54.00 QL: 1

EQUIP NAME: ESW FROM EDG COOLER 1E-53A TO STORM SEWER

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	B	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

FUNCTION 1	3	C	1	B	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

Dedication No. D2008-004
Page 10 of 16
Attachment 2

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

B ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)
PER NSOA, ESW IS A SUPPORT SYSTEM & DOES NOT PERFORM DIRECT SAFETY ACTIN S.

REFERENCE SOURCES (20 char. each linemax.):

DBD-A61-004	DED 1203.04
DEDI 2203.25	DGC-Q200
7884-M190	

PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: HBD081 SUS: 54.00 QL: 1

EQUIP NAME: ESW FROM EDG COOLER 1E-53B TO STORM SEWER

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	B	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

Dedication No. D2008-004
Page 11 of 16
Attachment 2

FUNCTION 1	3	C	1	B	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

B ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)
PER NSOA, ESW IS A SUPPORT SYSTEM AND DOES NOT PERFORM DIRECT SAFETY ACT IONS.

REFERENCE SOURCES (20 char. each linemax.):
DBD-A61-004
DED 1203.04
DEDI 2203.25
DGC-Q200
7884-M190

PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

NG-014Q REV. 9

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: 1E053A SUS: 24.01 QL: 1

EQUIP NAME: HEAT EXCHANGER, DIESEL SKID, 1G031/EDG

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	A	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

Dedication No. D2008-004
Page 12 of 16
Attachment 2

FUNCTION 1	3	C	1	A	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2	3	C	1	A	P
TRANSFER HEAT					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

A ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)

REFERENCE SOURCES (20 char. each linemax.):

BECH-MRS-M015	UFSAR 3.2 TBL 3.2-1
C470 DEM C.3	M015-084, 085 & 086

PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

NG-014Q REV. 9

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: 1E053B SUS: 24.01 QL: 1

EQUIP NAME: HEAT EXCHANGER, DIESEL SKID, 1G021/EDG

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	A	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

FUNCTION 1	3	C	1	A	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2	3	C	1	A	P
TRANSFER HEAT					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

A ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

Dedication No. D2008-004

Page 13 of 16

Attachment 2

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)

REFERENCE SOURCES (20 char. each linemax.):

BECH-MRS-M015	UFSAR 3.2 TBL 3.2-1
C470 DEM C.3	M015-084,085 & 086

PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

NG-014Q REV. 9

PART NO.	DESCRIPTION	QUAN. REQ.	GA. KIND AND CLASS	SPEC. NO.
02-651	FLANGE	2	6"-150# R.F.S.O.-C.S.	A181
02-3971	WELD STRIP	2	.050 S.S.	18-8
04-1249	BELLOWS - 8 CONV.	1	.020 S.S.	SA-240/321

DESIGN DATA	
SERVICE	
NOM. SIZE	6"
OPER. PRES.	80 P.S.I.G.
TEMP.	700°F
EXP.	1"
COMP.	1"
TOTAL MOV.	2"
INST. LGTH.	9 3/4"
ANG. + LAT.	0
EFF. AREA	44.75 IN.²
TEST	AIR & SOAP BUBBLE @ ATM.

CONTROLLED

(4) 1/2" x 1/2" x 1/8" C.S. ANGLE SHIPPING BARS

8 - 7/8" DIA. HOLES ON A 9 1/2" DIA. B.C.

02-651

02-3971

04-1249

Dedication No. 0300S-004
Page 14 of 16
Attachment 3

11" O.D.

8.27" O.D.

6.69" O.D.

6.85" I.D.

3/4" | 5 1/8" | 3/4" | 1 9/16"

GMAW

R.W.

9 3/4" +0 -1/16

INSTALLED FREE LENGTH

TOL. 9-24

CUSTOMER		SOLAR REF.	STANDARD

SOLAR — SAN DIEGO, CALIFORNIA 92112 — A DIVISION OF INTERNATIONAL HARVESTER COMPANY

INDUSTRIAL PRODUCTS

DRAWN BY	L. EBERLY	11-7-83
CHECKED	JAL	5-1-84
PROJ. ENGR.		
DES. ENGR.		
APPD.		

L. EBERLY	11-7-83		
CHANGE	BY	DATE	

NAME: 6" CONV. COUPLING

DWG. NO. 09-600-B

REV.	DESCRIPTION	ENG	DR	CHK	SUPV	MATL	APPROVALS	DATE
0	Issued for Rev. 2 of Requisition M-15	RJB						12/8/82

SUPPLEMENTARY QUALITY ASSURANCE REQUIREMENTS (Continued)

ITEM	A Bechtel Shop Inspection	B Seismic Calculations	C Mill Test Reports	D Dimensional Inspection Records	E Documented Insp. Acceptance Records	F Cert. of Conformance to Appr. Dwgs.	G Code or Standards Documents	H Performance Test Reports	I Bechtel Field Inspection	J Field Pre-op Test Documents	NOTES
12.0 Diesel Oil Transfer Pump	x	x				x		x (14)	x	x	(14) Running and Hydro Test
13.0 Flexible Hose Connectors		x							x		
14.0 Air Intake Expansion Bellows						x			x		
15.0 Exhaust Expansion Bellows						x			x		
16.0 Service Water Expansion Joint						x			x		
17.0 Generator Control Panels w/Exciter	x	x				x		x (15)	x	x	(15) Continuity Test
18.0 Grounding Resistor and Transformer						x			x	x	

NOTE: No seller documentation is necessary for QA Requirements A and I.

No seller documentation is necessary before shipment for QA Requirement J.

Dedication No. D2008-004

Page 15 of 16

Attachment 4

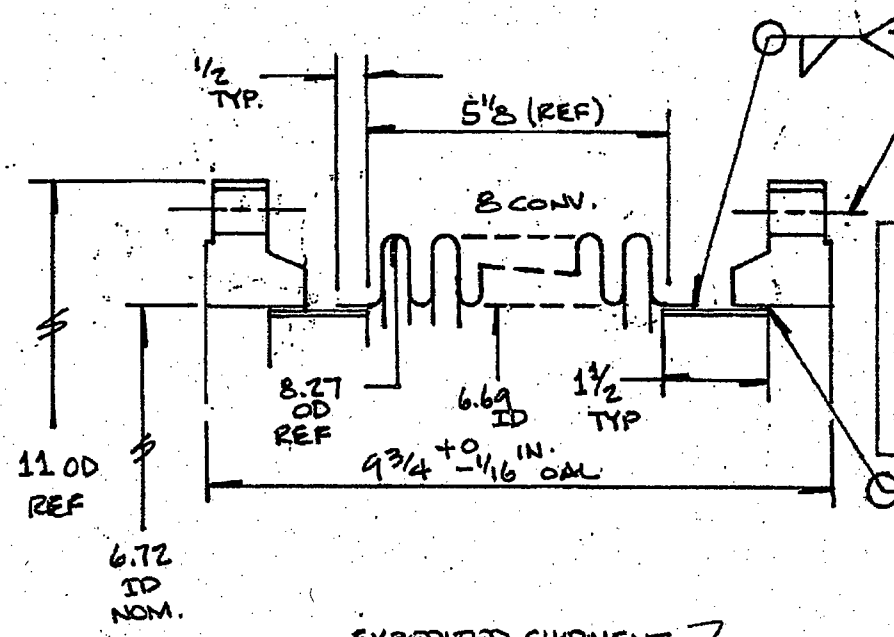
G-231-A 8-8-62	BECHTEL POWER AND INDUSTRIAL DIVISION	STANDBY DIESEL GENERATORS Duane Arnold Energy Center Unit No. 1 Palo, Iowa	JOB No 7884 Attachment to Requistion M-15	3/3 REV. 0

BADGER INDUSTRIES
A Division of MARKOVITZ ENTERPRISES, INC.
100 BADGER DRIVE • ZELIENOPLE, PA 16063
TELEPHONE 724-452-4500 • FAX 724-452-0802 • WEB SITE: www.badgerind.com

EXPANSION JOINT MANUFACTURERS ASSOCIATION EJMA MEMBER

ENGINEERING REPORT

QUOTE NO.	Q08-38997	SERVICE CONDITIONS		LINE NUMBER	1
CUSTOMER	FPL ENERGY			QUANTITY	2
DUANE ARNOLD ENERGY CTR.		DSGN. PRESS (PSIG)	108 / 157	SIZE	6NPS
CUST. INQ. NO.	TELECON 05.08.08	DSGN. TEMP. (°F)	70 / 100	MODEL NO.	6-BMF-SF1
CUST. PROJ.		AX. EXTNSN. (IN.)	1.0	TAG NUMBER	09-600-B
CUST. P.O. NO.	K122907	AX. COMP. (IN.)	1.0	PREPARED BY	R.J. STASTNY
SALES ORDER	C08-24189	LATERAL (IN.)	—	DATE	05/08/08
PART I.D.	18-006008-M1008	ANGULAR (DEG.)	—	PAGE	1 OF 1



Dedication No. D2008-004
Page 16 of 16
Attachment 5

EXPEDITED SHIPMENT

MATERIALS	SHIP WK. END. 05/09/08	FABRICATION	TESTING
BELLOWS: SA240T321SS(.025)	MFGRG. NOTES	☐ COMMERCIAL	☐ L.P. BELLOWS
PIPE:	SHIP [1] PIECE RUSH. MANUFACTURE/FAB. SECOND PIECE IN PRESENCE OF CUST. QUALITY CONTROL PERSONNEL.	☒ ANSI B31.1	☐ X-RAY BELLOWS LSW
FLANGES: SA105 CS 150LB SO/RF		☐ ANSI B31.3 APP. X	☒ L.P. ATTACH WELD
LINER:		☐ ASME SECT VIII	☐ X-RAY PIPE LSW
COVER:		☐ U2 INSPECTION	☐ AIR AND SOAP
COVER RINGS:		☐ ASME APPNDX. 26	☐ HYDRO @ ____ PSI
RODS ( ):		☒ CUSTOMER	☐ PNEUM @ ____ PSI
NUTS:		☒ EJMA	☐ VACUUM
COLLARS: SA240T321SS(.050)		☒ MTRS	☐ MASS SPEC.
LUGS:		☒ ASME SECT IX	DRAWINGS
GUSSETS ( ):	REVISIONS	☐ WPS/PQR APPRVL	☐ APPROVAL
REINF. RINGS:	NO / DATE / BY	☐ OTHERS	☒ RECORDS
SHIPPING BARS: C.O.C.S.	A		PAINT
	B		☐ HEAT RESIST. BLK
	C		☒ NONE

Karl Feintuch

From: Steve_Catron@fpl.com
Sent: Thursday, May 15, 2008 2:46 PM
To: Karl Feintuch
Subject: Re Dedication

I confirmed this morning that the Dedication Package and Procedure are not proprietary. However, the Dedication package was revised since the call and has been discussed with Region III and NRR. I have a fresh copy of the Dedication coming and will forward to you for inclusion in your notes.
Sent from my BlackBerry Wireless Handheld

5/16/08
From: Karl Feintuch
The above email of 5/15/08, 2:46 pm; the cover email of 5/15/08; and its referenced attachment were received to update the information discussed during the conference call and in response to my telephone request to check for proprietary information within the handouts discussed during the conference call.

Karl Feintuch

From: Steve Catron [Steve_Catron@fpl.com]
Sent: Thursday, May 15, 2008 4:27 PM
To: Karl Feintuch
Cc: Tony_Browning@fpl.com; Tom Byrne
Subject: D2008-004 Rev 1
Attachments: 20080515140159413.pdf

Note the attached revision to the Dedication Package for the ESW Bellows. Not much changed, but it is the latest version.

Steve Catron
Licensing Manager
FPL Energy Duane Arnold Energy Center
(319) 851-7234 work
(319) 210-5478 cell
steve_catron@fpl.com

----- Forwarded by Steve Catron/Pda/FPL Energy/FplNuc on 05/15/2008 03:26 PM -----

Brian M Taylor 05/15/2008 03:23 PM

To: Steve Catron/Pda/FPL Energy/FplNuc@FPLNUC
cc:
Subject: D2008-004 Rev 1

See attached:

(See attached file: 20080515140159413.pdf)

attachment 20080515140159413.pdf attached to email of 5/15/08 4:27pm

EFFECTS OF REVISION

Dedication/Upgrade Package No. D2008-004 Revision 1

Reason for Revision: REVISION OF REQUIRED TASKS CONDUCTED UNDER METHOD 1 AND METHOD 3 VERIFICATIONS

1. Does this revision affect the purchase description contained in the Stock Item # or Phrase Codes? ☐ Yes ☒ No

   If yes, revise the purchase description.

2. Do items in the Warehouse dedicated to previous revisions of this Dedication Package require additional testing/inspection? ☐ Yes ☒ No

   If yes, initiate an Action Request (AR) on the items.

3. Do items installed in the plant/ISFSI dedicated to previous revision of this Dedication Package require additional testing/inspection? ☐ Yes ☒ No

   If yes, initiate an AR on the items.

4. Does this revision require that a MAT tag be attached to the item which identifies differences between the old and new items (such as part number, material, etc.) and identifies affected MDL, UFSAR, or 10 CFR 72 drawings and documents.? ☐ Yes ☒ No

Revision 1 to Document C.2

DUANE ARNOLD ENERGY CENTER
COMMERCIAL GRADE DEDICATION/UPGRADE EVALUATION

Dedication/Upgrade No. D2008-004 Revision 1 Page 1 of 16 1

Signatures:

Charlie Zalewski — Date 5/9/2008
Responsible Engineer

N/A — Date
EQ Reviewer

Date 5-9-08
ASME Reviewer

N/A — Date
Seismic Reviewer

Date 5/9/08
PEG Engineer

N/A REFERENCE SURVEILLANCE RELEASE FOR K122907 — Date
Supplier Assessment (as applicable) 5/12/08

Have Stock Item #, Dedication/Upgrade Phrase Code and/or the Master Dedication Log been updated to reflect current rev. and a copy of the completed evaluation sent to QC?

Yes X Initials

If there are differences between the old and new items being dedicated, do the Acceptance Criteria for the item contain a requirement for a MAT tag to be attached to the item which identifies differences between the old and new items (such as part number, material, etc.) and identifies affected MDL, UFSAR, or 10 CFR 72 drawings and documents.?

☐ Yes ☒ No Reason:

Attachments:

1. Pressure Integrity Test — Pages 9 of 16
2. Q-200 Code Data Sheets for HBD-080, HBD-081, 1E053A 1E053B — Pages 10 – 13 of 16 1
3. SOLAR Turbine Drawing 09-600-C1 (M015-022-1) — Pages 14 of 16
4. "Supplementary Quality Assurance Requirements " Attachment to BECH-MRS-M015 Page 3 of 3 — Pages 15 of 16
5. Badger Industries Engineering Report for Purchase Order K122907 — Pages 16 of 16

Dedication/Upgrade No. D2008-004 Revision 1 Page 2 of 16

Section A **COMPONENT/ITEM**

Stock Item #: N/A

Mfg. P/N: 09-600-8 Manufacturer: BADGER INDUSTRIES

ITEM DESCRIPTION: EXPANSION BELLOWS FOR EMERGENCY DIESEL GENERATOR 1G031/1G021 SKID HEAT EXCHANGER OUTLET CONNECTIONS TO EMERGENCY SERVICE WATER.

Section B **APPLICATION**

What is the end use or final application of the item being dedicated/upgraded?

EMERGENCY DIESEL GENERATOR 1G031/1G021 SKID HEAT EXCHANGER OUTLET CONNECTIONS TO EMERGENCY SERVICE WATER

Describe or list plant I.D. or application:

Piping components connecting HBD-080 and 1E053A

Piping components connecting HBD-081 and 1E053B

Section C **REASON FOR DEDICATION/UPGRADE**

Type of Evaluation (check correct item):

☒ Dedication (for use of an item as a basic component)

☐ If the item is to be dedicated, does it meet the requirements of the definition of a Commercial Grade item as defined in FPL-1 "Quality Assurance Topical Report" (QATR).

☐ Upgrade (for use of an item in an Augmented Quality application, that is not used as a 10 CFR 21 basis component)

Section D

QUALIFICATION REQUIREMENTS

*** ENVIRONMENTAL QUALIFICATION ***

Does this item/service require environmental qualification? ☐ YES ☒ NO

If YES, list the governing document which establishes qualification:

_____

If NO, provide the basis for why this item does not require environmental qualification:

☒ Item not required (CHAMPS EQ Data Field is N/A) to be in the EQ Program. (Attach CHAMPS Data Sheet)

☐ Item not susceptible to degradation in EQ harsh environment (Temperature, Pressure, Humidity, Radiation, Aging, etc.) Explain. _____

☐ Other (See attachment) _____

Basis: _____

*** SEISMIC QUALIFICATION ***

☐ Q-200 exists for the item being dedicated or its parent component and the Q-200 for the item does not require seismic qualification.

!!! NO FURTHER EVALUATION NECESSARY !!!

☐ Q-200 exists for the item being dedicated and the Q-200 requires Seismic Qualification.

Determine method which establishes qualification.

- ☐ Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section "G" for equivalency evaluation).
- ☐ Original seismic qualification document
- ☐ Seismic test/analysis as provided by this dedication evaluation. See Attachment _____

☒ Q-200 does not exist for the item being dedicated but does exist for its parent component and the parent requires seismic qualification.

Determine method which establishes qualification.

- ☒ Item is similar to the original item being replaced and will not invalidate the original qualification. (See Section "G" for Equivalency Evaluation.)
- ☒ Original seismic qualification document M015-104
- ☐ Seismic test/analysis as provided by this dedication evaluation. See Attachment _____

Comments:

The weight of the bellows is comparable to the original and therefore no change in the seismic requirements. These items are considered seismically rugged for nuclear power plants.

Section E **TECHNICAL REQUIREMENTS AND REFERENCES**

List all applicable technical references/standards required to evaluate the dedication/upgrade of this item.

ASME:	N/A	IEEE:	N/A
ANSI:	B31.1	NFPA:	N/A
REG. GUIDE:	N/A	UL:	N/A
MIL. SPEC.:	N/A	TECH. SPEC.:	3.8
		10 CFR 72 Licensing Basis Document:	N/A
UFSAR:	8.3.1.1.2.3, 9.2.3.2.2	Other:	BECH-MRS-M015
			M015-022-1 (09-600-8)

Section F **FAILURE MODES AND EFFECTS ANALYSIS**

Parent Item/Application Safety Function:

SYSTEM PRESSURE BOUNDARY

Item Safety Function:

SYSTEM PRESSURE BOUNDARY

FAILURE MODE/MECHANISM	EFFECT	CRITICAL CHARACTERISTIC
FATIGUE	FRACTURE – LOSS OF PRESSURE BOUNDARY INTEGRITY	MATERIALS DIMENSIONS CONFIGURATION

Section G

EQUIVALENCY EVALUATION

CHARACTERISTIC	ORIGINAL VALUE	REPLACEMENT ITEM VALUE	IS THIS VALUE ACCEPTABLE?
Flange Material	ASTM A105 (Note: Dwg 09-600-8 indicates ASTM A181)	ASTM A105	YES *
Flange Dimensions	Per ANSI B16.5 Class 150 RF Slip-On Flange	Per ANSI B16.5 Class 150 RF Slip-On Flange	YES
Bellows Material	ASME SA240 T321	ASME SA240 T321	YES
Bellows "OD" Dimension Ref: Attachment 3	8.27" Nominal	8.27" Nominal	YES
Bellows "ID" Dimension Ref: Attachment 3	6.69" Nominal	6.69" Nominal	YES
Weld Strip Material	18-8	ASME SA240 T321	YES **
Expansion Joint Overall Length	9.75 +0 -1/16"	9.75 +0 -1/16"	YES
Part Number	09-600-8	09-600-8 (model 6-8MF-SF1)	YES
Pressure Test	Air & Soap Bubble Test @ 1 ATM.	150% of 50 psig Design Pressure = 75psig	YES

Basis for acceptance:

The Fit, Form, and Function of the replacement expansion joint are equivalent to the original component.

* Per BECH-M190, ASME SA105 is an acceptable alternative material to ASTM A181.

** Weld Strip Material to be evaluated by EMA

Section H

ENGINEERING EVALUATION

An expansion joint is a device used to allow movement in a piping system while containing pressure and the medium running through it. Frequently, thermal growth, equipment movement, vibration or pressure pulsation can cause movement in a piping system. The expansion joint aids in creating flexibility for this movement. There are four basic movements that can be applied to a bellows. These are Axial, Lateral, Angular and Torsional. Bellows behave like springs in a piping system. When they are compressed, they resist the movement the same as a spring would. The spring rate of a bellows is entirely dependent on bellows geometry and material properties. This piping connection for these joints is slip-on flanges, raised face, rated at 150#. The subject expansion bellows is to be used for supplying cooling water to the Standby Diesel Generator. The original technical specification requires that there be an expansion bellows between the plant piping and the piping supplied on the Diesel. The drawing, M015-022-1 established the original dimensions and material requirements for the bellows. Attachment 4 defines the supplementary quality requirements for the expansion joint, no material requirements were stated. The original bellows was designed by Solar Turbine which has since been purchased by Badger Industries. There were no code requirements associated with the original expansion joint. The safety function of the bellows is system pressure boundary. The non-safety related function of the bellows is movement. Critical characteristics for design of the bellows are material of construction, dimensions, pressure test and configuration. Materials are chosen to assure adequate strength of the bellows. Dimension and configuration are chosen to assure proper fit alignment of the Diesel and plant piping. The pressure test will assure the bellows can withstand the pressures at the Diesel Generator Heat exchanger. Critical characteristics selected for acceptance are: part number, dimensions, configuration, material and pressure test. Part number verification will give reasonable assurance that the proper item was received. Verification of the dimensions and configuration will give reasonable assurance that the bellows will fit the application. Verification of material will give reasonable assurance that the correct material was received. The weight of the bellows is comparable to the original and therefore no change in the seismic requirements. These items are considered seismically rugged for nuclear power plants. This dedication package will be a combination of method 1 and method 3. The supplier is providing two expansion joints. The first expansion joint will be manufactured and sent directly to DAEC. An initial receipt inspection will be performed (dimensions, hydrotest). The second unit will be manufactured under the observation of the Procurement Quality group for method 3. The method 3 Source Verification will review material traceability. The method 3 source verification and review of materials provides a reasonable assurance the respective material components of both units (Flanges, Collars, Bellows) are from the same heat lots (i.e. unit 1 flanges are same heat lot as unit 2 flanges etc.). The source verification concluded that the Flange materials and Collar materials were acceptable. During the source verification, the MTRs for the Bellows were found to be illegible. Therefore additional material testing on the second unit was performed by Argo Turbo /Spectrum Tech per PO K 122917 under their 10CFR50 App. B program as well as in-situ material testing of the installed 1st unit by FPLE DAEC Program Engineering. We can conclude that the Bellows material of the first unit is acceptable based upon the acceptable results of the additional material testing above. Upon a successful source verification of materials under method 3 and a successful receipt inspection, the first unit will be dedicated. Successful completion of these dedication requirements will provide assurance that when installed the Expansion joint will perform its intended safety related function.

Section I

SAMPLING PLAN SPECIFICATIONS

100%

Dedication/Upgrade No. D2008-004 Revision 1 Page 7 of 16

Section J

SELECTION OF CRITICAL CHARACTERISTICS AND ACCEPTANCE CRITERIA/METHOD

Method 1: ☒ Special Tests/Inspections and Standard Receipt Practices

Critical characteristics to be verified by Method 1 will be indicated as such on the selection of critical characteristics and acceptance criteria/method worksheet and will include the specific acceptance criteria, including tolerances. Special tests, standard receipt inspection, post installation inspections will be identified.

Method 2: ☐ Commercial Grade Survey of Supplier

List those critical characteristics required to be verified by the commercial grade survey.

Method 3: ☒ Source Verification

List all critical characteristics requiring source surveillance and the applicable acceptance criteria.

Critical Characteristics	Acceptance Criteria
Material Verification	Materials meet requirements of Attachments 3 and 5 are traceable to CMTRs - SEE SECTION H ENGINEERING EVALUATION

1

SPECIAL TESTS/INSPECTIONS AND STANDARD RECEIPT PRACTICES

Will performance of test, inspections, or standard receipts require disassembly of item?

☐ Yes ☒ No {C001} (Ref. 10)

CRITICAL CHARACTERISTIC	ACCEPTANCE CRITERIA* (INCLUDE TOLERANCES)**	PRE, POST, SPECIAL OR STANDARD TEST METHOD
PART NUMBER	09-600-8/Model 6-8MF-SF1	STANDARD
OVERALL DIMENSIONS OF EXPANSION JOINT	"INSTALLED FREE LENGTH" of 9 ¾" (+0 -1/16") PER BADGER ENGINEERING REPORT (ATT.#5)	STANDARD
FLANGE DIMENSIONS	NOMINAL DIMENSIONS PER ANSI B16.5 CLASS 150, RF, SLIP-ON FLANGE	STANDARD
ACCEPTABLE RELEASE OF SOURCE VERIFICATION	VERIFY RECEIPT OF "FPL/FPLE QA SURVEILLANCE RELEASE" FORM	STANDARD
FLANGE OD	11" NOMINAL	STANDARD
DIAMETER OF BOLT HOLES	7/8" NOMINAL	STANDARD
NUMBER OF BOLT HOLES	8	STANDARD
BOLT CIRCLE DIAMETER	9 ½" NOMINAL	STANDARD
CONFIGURATION	PER BADGER ENGINEERING REPORT (ATT#5) AND SOLAR DRAWING 09-600-8	STANDARD
PRESSURE TEST	VERIFY ACCEPTABLE PRESSURE INTEGRITY TEST PER ATTACHMENT 1	SPECIAL
ADDITIONAL MATERIAL TESTING BY ARGO TURBO /SPECTRUM OR FPLE DAEC PROGRAM ENGINEERING	VERIFY RECEIPT OF ACCEPTABLE MATERIALS TESTING REPORT FROM EITHER ARGO TURBOSERVE /SPECTRUM AND FPLE DAEC PROGRAM ENGINEERING	SPECIAL

1

NOTES:

*All numerical values shall be specified in decimal form with the appropriate number of significant digits as determined by the responsible engineer. {C003} (Ref. 12)

**For purpose of determining conformance with the acceptance criteria, an observed (measured) value or a calculated value shall be rounded off in accordance with the round-off method of ASTM Practice E 29, "Using Significant Digits in Test Data to Determine Conformance with Specifications". {C003} (Ref. 12)

PRESSURE INTEGRITY TEST RESULTS ACCEPTANCE PAGE
ATTACHMENT #1

1.0 Title

1.1 Pressure Integrity Test Results Acceptance Form

2.0 Purpose

The purpose of this form is to verify the expansion joint pressure integrity, which will be 150% of system design pressure of 50 psig. The pressure test will assure the bellows can withstand the pressures at the Diesel Generator Heat exchanger

3.0 SAMPLE SIZE:

100% of all expansion joints.

4.0 TEST EQUIPMENT

2 6" 150# Blind Flanges, one with piping connections for pressure injection. Supply of Potable Water and Hydro Pump capable of pressurizing to 100 psig. Indicating pressure gauge. Gauge shall have dial graduated over a range of at least 1.5 times, but not more than 4 times the intended maximum test pressure (78 psig).

5.0 PROCEDURE

NOTE, per the supplier the shipping restraints are not to be relied upon to hold pressure during testing. All thread rod through flange bolt holes should be used for restraint of the flanges. The shipping restraints may be removed.

QC shall witness the testing of the expansion joint. Per the following instructions:

1. Connect the water supply to the pressure injection point, increase pressure to 75 PSIG (-0, +3 PSIG). Hold time 10 (ten) minutes minimum.

6.0 ACCEPTANCE CRITERIA:

Successful completion of the test. No pressure leaks.

7.0 M&TE Equipment

7.1 M&TE USED: _____ Cal Date: _____

8.0 Personnel

8.1 Performed By: _____ Date: _____

8.2 The Quality Control Inspector has witnessed the pressure test and verified a successful test.

87.3 QC Inspector _____ Date: _____

Comments:

_____

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: HBD080 SUS: 54.00 QL: 1

EQUIP NAME: ESW FROM EDG COOLER 1E-53A TO STORM SEWER

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	B	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

FUNCTION 1	3	C	1	B	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

Dedication No. D2008-004 R/1
Page 10 of 16
Attachment 2

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

B ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)
PER NSOA, ESW IS A SUPPORT SYSTEM & DOES NOT PERFORM DIRECT SAFETY ACTIN S.

REFERENCE SOURCES (20 char. each linemax.):
DBD-A61-004
DED 1203.04
DEDI 2203.25
DGC-Q200
7884-M190

PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

NG-014Q REV. 9

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: HBD081 SUS: 54.00 QL: 1

EQUIP NAME: ESW FROM EDG COOLER 1E-53B TO STORM SEWER

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	B	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

FUNCTION 1	3	C	1	B	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

Dedication No. D2008-004 R1
Page 11 of 16
Attachment 2

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

B ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)
PER NSOA, ESW IS A SUPPORT SYSTEM AND DOES NOT PERFORM DIRECT SAFETY ACT IONS.

REFERENCE SOURCES (20 char. each linemax.):
DBD-A61-004
DED 1203.04
DEDI 2203.25
DGC-Q200
7884-M190

PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

NG-014Q REV. 9

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: 1E053A SUS: 24.01 QL: 1

EQUIP NAME: HEAT EXCHANGER, DIESEL SKID, 1G031/EDG

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	A	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

FUNCTION 1	3	C	1	A	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2	3	C	1	A	P
TRANSFER HEAT					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

Dedication No. D2008-004 R/1
Page 12 of 16
Attachment 2

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

A ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)

REFERENCE SOURCES (20 char. each linemax.):

BECH-MRS-M015	UFSAR 3.2 TBL 3.2-1
C470 DEM C.3	M015-084, 085 & 086

PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

NG-014Q REV. 9

Q-200 CODE DATA SHEET

EDBUR NUMBER

Type of change
__ Initial Q-200
__ Q200 Superceed
__ Q200 Revision

Q200 Upgrades and Notifications
QL upgrades: __ History Acceptable for Upgrades (Attach form)
QL Notifications: __ Departments/Personnel Notified (Attach form)
__ Immediate Notifications not required

EQUIP ID: 1E053B SUS: 24.01 QL: 1

EQUIP NAME: HEAT EXCHANGER, DIESEL SKID, 1G021/EDG

REQUESTING DOCUMENT: NG-92-2333

FINAL Q-200 CODE				
3	C	1	A	P
1	2	3	4	5
POSITION				

POS 1 - SAFETY CLASS
1 SAFETY CLASS 1
2 SAFETY CLASS 2
3 SAFETY CLASS 3
4 OTHER
N NON-SAFETY-RELATED

POS 2 - NRC QUALITY GROUP
A RX COLLANT PRESS BOUNDRY
B SAFETY SYSTEM
C AUX/COLLING SYS
D RADIOACTIVE CONT SYS
E ELEC CLASS 1E
N NOT RECOGNIZED

POS 3 - SEISMIC
1 SEISMIC CATEGORY 1
A SEISMIC CATEGORY A
2 SEISMIC CATEGORY 2
0 NO REQUIREMENT

POS 4 - SAFETY SIGNIFICANT
A ESSENTIAL
B SAFETY RELATED
M MULTIPLE
C SIGNIFICANT
L LICENSE POSITION
P POWER GENERATION
D INSIGNIFICANT

POS 5 - MECH INTEGRITY
A AUTOMATIC OPERATION
M MANUAL OPERATION
P PASSIVE INTEGRITY
O REMIAN "AS IS"
N NON-SAFETY-RELATED

FUNCTION 1	3	C	1	A	P
SYSTEM PRESSURE BOUNDARY					
(52 char max.)					
FUNCTION 2	3	C	1	A	P
TRANSFER HEAT					
(52 char max.)					
FUNCTION 3					
(52 char max.)					
FUNCTION 4					
(52 char max.)					

Dedication No. D2005-004 R1
Page 13 of 16
Attachment 2

APPLICABLE 10CFR50, APPENDIX B CRITERIA
(LETTER CORRESPONDS TO POSITION 4 INDICATOR)

A ALL APPLY	__ 10&12 INSPECTION
__ 3 DESIGN	__ 11&12 TEST CONTROL
__ 4&7 PROCUREEMENT	__ 14 STATUS
__ 8 MATERIAL	__ 16 CORR. ACTION
__ 9 SPECIAL PROCESS	__ NONE APPLY

IF ANY OF THE ABOVE CRITERIA APPLY THE FOLLOWING CRITERIA SHALL ASLO APPLY: 1, 2, 5, 6, 13, 15, 17, 18

LICENSE POSITION: (144 char. max)

COMMENTS: (288 char. max)

REFERENCE SOURCES (20 char. each linemax.):

BECH-MRS-M015	UFSAR 3.2 TBL 3.2-1
C470 DEM C.3	M015-084,085 & 086

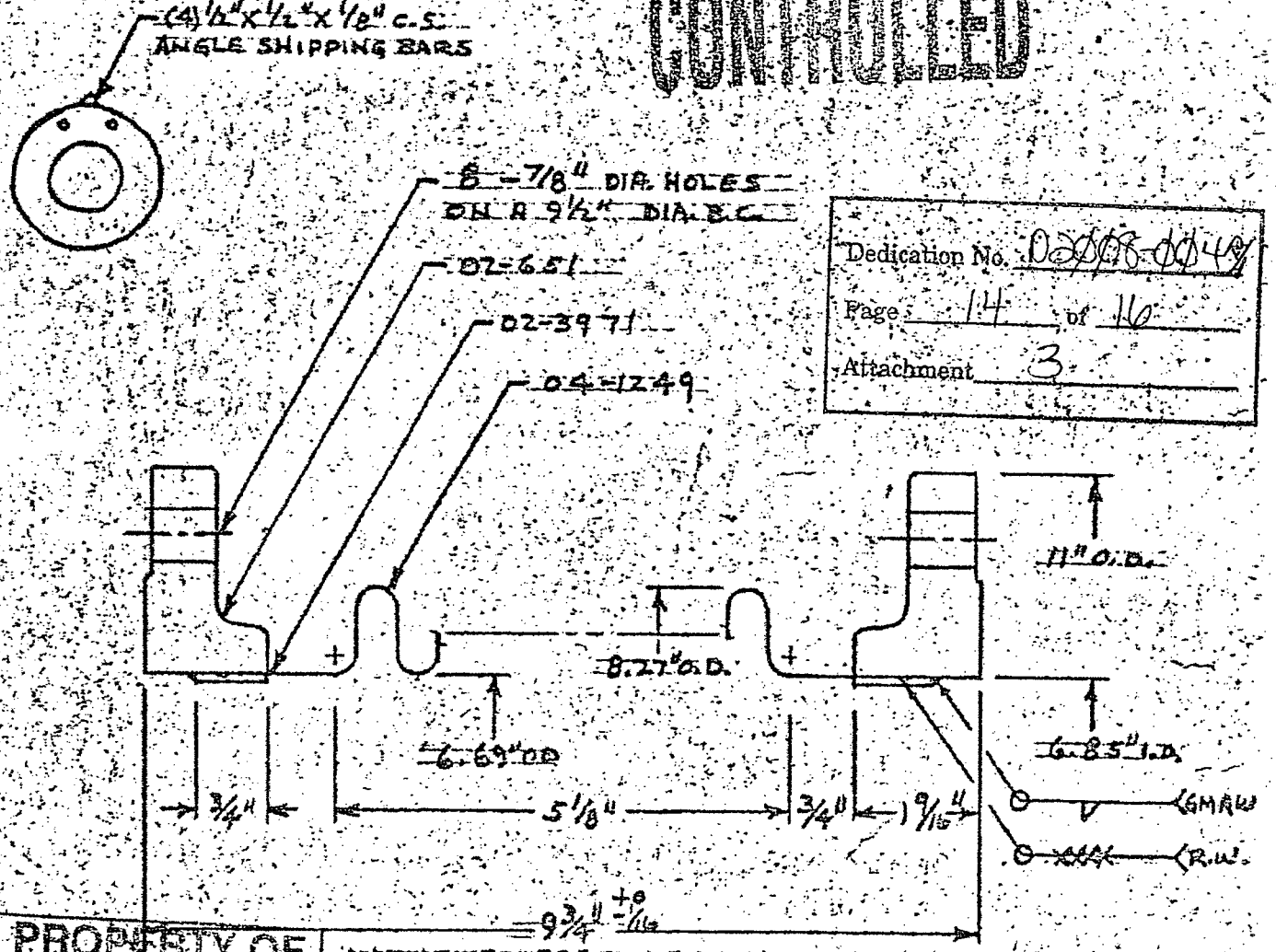
PREPARED BY: _____ DATE: _____

VERIFIED BY: _____ DATE: _____

CONFIG. CONTROL:
DATA ENTERED: _____ DATA VERIFIED: _____

NG-014Q REV. 9

PART NO.	DESCRIPTION	QUAN. REQ.	MA. KIND AND CLASS	SPEC. #	DETAILS
02-651	FLANGE	2	6"-150# R.F.S.O.-C.S	A181	SERVICE
02-3971	WELD STRIP	2	.050 S.S.	18-8	NOM. SIZE 6"
04-1249	BELLOWS - 8 CONV.	1	.0209-9	SA-240/T321	OPER. PRES. 80 P.S.I.G.
					TEMP. 700°F
					EXP. 1"
					COMP. 1"
					TOTAL MOV. 2"
					INST. LGTH. 9 3/4"
					ANG. + LAT. 0
					EFF. AREA 44.75 IN.
					TEST AIR & SOAP BUBBLE @ ATM.



Dedication No. 0008-0049
Page 14 of 16
Attachment 3

TOL. 9-24

CUSTOMER | SOLAR REF. STANDARD

SOLAR — SAN DIEGO, CALIFORNIA — A DIVISION OF INTERNATIONAL HARVESTER COMPANY

INDUSTRIAL PRODUCTS

DRAWN BY	L. EARLE 4-7-64
CHECKED	JRC 5-7-64
PROJ. ENGR.	[illegible]
DEPT. DIAG.	
NAME	6" CONV. COUPLING
DWG.	09-600-B

DRAFTSMAN'S CHANGE | BY | DATE

REV.	DESCRIPTION	ENG	DR	CHK	SUPV	MATL	APPROVALS	DATE
0	Issued for Rev. 2 of Requisition M-15	RJB						12/12

SUPPLEMENTARY QUALITY ASSURANCE REQUIREMENTS (Continued)

ITEM	A Bechtel Shop Inspection	B Seismic Calculations	C Mill Test Reports	D Dimensional Inspection Records	E Documented Insp. Acceptance Records	F Cert. of Conformance to Appr. Dwgs.	G Code or Standards Documents	H Performance Test Reports	I Bechtel Field Inspection	J Field Pre-op Test Documents	NOTES
12.0 Diesel Oil Transfer Pump	x	x				x		x (14)	x	x	(14) Running and Hydro Test
13.0 Flexible Hose Connectors		x							x		
14.0 Air Intake Expansion Bellows						x			x		
15.0 Exhaust Expansion Bellows						x			x		
16.0 Service Water Expansion Joint						x			x		
17.0 Generator Control Panels w/Exciter	x	x				x		x (15)	x	x	(15) Continuity Test
18.0 Grounding Resistor and Transformer						x			x	x	

NOTE: No seller documentation is necessary for QA Requirements A and I.

No seller documentation is necessary before shipment for QA Requirement J.

Dedication No. D2008-0049

Page 15 of 16

Attachment 4

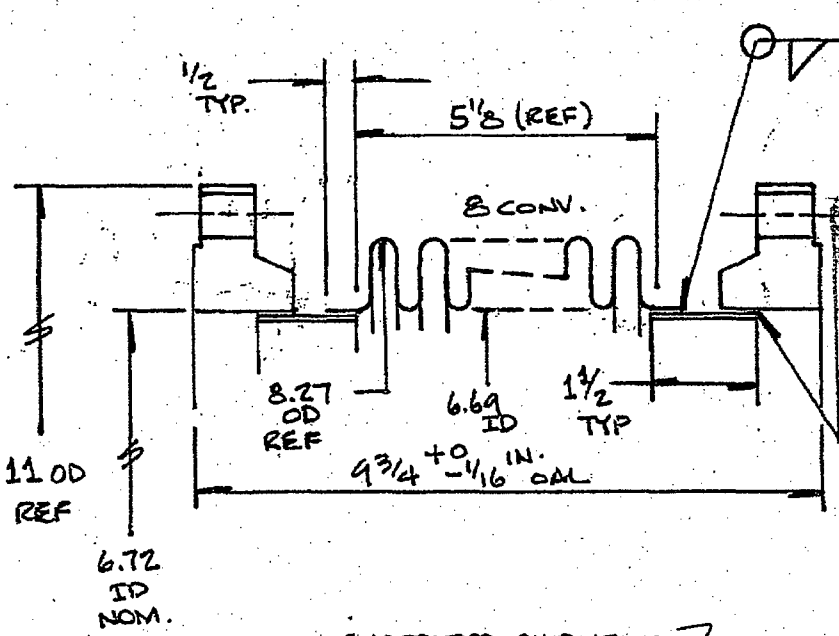
G-231-A 8-8-62	BECHTEL POWER AND INDUSTRIAL DIVISION	STANDBY DIESEL GENERATORS Duane Arnold Energy Center Unit No. 1 Palo, Iowa	JOB No 7884 Attachment to Requistion M-15
			3/3 REV. 0

BADGER INDUSTRIES
A Division of MARKOVITZ ENTERPRISES, INC.
)0 BADGER DRIVE • ZELIENOPLE, PA 16063
ELEPHONE 724-452-4500 • FAX 724-452-0802 • WEB SITE: www.badgerind.com

EXPANSION JOINT MANUFACTURERS ASSOCIATION EJMA MEMBER

ENGINEERING REPORT

		SERVICE CONDITIONS			
QUOTE NO.	Q08-38997			LINE NUMBER	1
CUSTOMER	FPL ENERGY	125	50	QUANTITY	2
DUNNE ARNOLD ENERGY CTR.		DSGN. PRESS (PSIG)	~~105 / 157~~	SIZE	6NPS
CUST. INQ. NO.	TELECON 05.08.08	DSGN. TEMP. (°F)	~~400 / 100~~	MODEL NO.	6-BMF-SF1
CUST. PROJ.		AX. EXTNSN. (IN.)	1.0	TAG NUMBER	09-600-B
CUST. P.O. NO.	K122907	AX. COMP. (IN.)	1.0	PREPARED BY	R.J. STASTNY
SALES ORDER	C08-24189	LATERAL (IN.)	—	DATE	05 / 08 /08
PART I.D.	JB-006008-M1008	ANGULAR (DEG.)	—	PAGE	1 OF 1



Dedication No. D2008-00419
Page 16 of 16
Attachment 5

EXPEDITED SHIPMENT

MATERIALS	SHIP WK. END. 05/09/08	FABRICATION	TESTING
BELLOWS: SA240T321SS(.025)	MFGRG. NOTES	☐ COMMERCIAL	☐ L.P. BELLOWS
PIPE:	SHIP [1] PIECE RUSH. MANUFACTURE/FAB. SECOND PIECE IN PRESENCE OF CUST. QUALITY CONTROL PERSONNEL.	☒ ANSI B31.1	☐ X-RAY BELLOWS LSW
FLANGES: SA105 CS 150LB SO/RF		☐ ANSI B31.3 APP. X	☒ L.P. ATTACH WELD
LINER:		☐ ASME SECT VIII	☐ X-RAY PIPE LSW
COVER:		☐ U2 INSPECTION	☐ ~~AIR AND SOAP~~
COVER RINGS:		☐ ASME APPNDX. 26	☒ HYDRO @ 75 PSI (A)
RODS ( ):		☒ CUSTOMER	☐ PNEUM @ ____ PSI
NUTS:		☒ EJMA	☐ VACUUM
COLLARS: SA240T321SS(.050)		☒ MTRS	☐ MASS SPEC.
LUGS:		☒ ASME SECT IX	DRAWINGS
GUSSETS ( ):		☐ WPS/PQR APPRVL	☐ APPROVAL
REINF. RINGS:		☐ OTHERS	☒ RECORDS
SHIPPING BARS: C.Q.C.S.			PAINT
			☐ HEAT RESIST. BLK
			☒ NONE

REVISIONS		
NO	DATE	BY
A	05.09.08	RJS
B		
C		

DRS Questions 5/09/08 - Dave Hills

1. What Code Section tells us what tests are required for weld repair and acceptance tests? When it was installed on the night of May 8, who looked at the bellows? Were they VT2 or was any test specified?

   Section IX for the welding, Section XI for the system pressure test. Note that the air pressure test performed was not the required pressure test utilizing ESW. That test had yet to be performed. With regards to the weld, QC did a pre-weld release visual inspection as well as a visual after the weld was completed.

   The bellows was observed by two VT2 qualified operators during the EDG maintenance run.

2. When dedication package is complete, NRC wants to see package and understand how it meets original requirements (code section, Specs from Fairbanks?)

   Rev 0 of dedication package up to Supplier Assessment signature provided electronically to Resident. This contains the design basis and critical characteristics. Note that Supply is currently working on Rev 1 to package as a result of minor corrections made by the vendor to the drawing.

   Due to the destruction of the CMTR's due to flooding issues, we are sending the bellows assembly out to a QL 1 vendor (Spectrum) to dedicate the item, perform a material certification and they will send it to us as a dedicated safety related item.

   Resident provided NRR with copy of DAEC-SC-PEG-04.

3. What is the plan to address Extent of Condition?

   DAEC has three other bellows assemblies that could be subject to a similar failure. One is located on the ESW outlet from the jacket water cooling heat exchanger on "A" diesel generator and the other two are located on ESW inlets of the scavenging air coolers on both the "A" & "B" diesel generators. None of the other three bellows assemblies show any signs of leakage during diesel runs or ESW surveillances. Due to the low operating pressures & temperatures and the low number of thermal and mechanical cycles during normal and emergency operations, it is unlikely these bellows assemblies would fail catastrophically. If a failure were to occur, it would reveal itself with minor leakage that would be found during diesel runs or ESW surveillances. This small leak is likely to have been induced while handling the bellows during the EDG HX replacement.

4. Request a conference call at 1300 to discuss dedication – Region (D. Hills, N. Shah) NRR (Vendor Inspection Branch) and Resident.

Distributed document C.3

Conference call established for 1300 in SCR. NRC has bridge number.

5. Resident office would like a briefing on what we think happened to cause the EDG to trip.

   Provided Resident with up to date Troubleshooting Log.