EVALUATION NBR: 01
EVALUATING ORG: OERM
EVAL ASIGND TO: TAMBUERO, PETE
EVAL REQUEST ORG: OERM
EVAL REQUESTOR: RAY, H
EVAL RETURNED BY: HUTCHINS, SP

IMPORTANCE CODE: ___ OEAP: ___ SCHEDULE CODE: ___ DATE FIXED: ___

EVAL DESC: DETERMINE PROPER SEALANT FOR DW SANDBED FLOOR Voids

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TANO 23OCT06
Determine/Evaluate the proper filler (sealer, caulk, etc.)
TANO 23OCT06
Material to use on the voids/seams in the DW sandbed bays
AS DESCRIBED IN IR/AR # 0054932.
TANO 23OCT06

THE SUBJECT EVALUATION (QUESTION) REQUIRES TECHNICAL
(DIRECTION, GUIDANCE, INTERPRETATION, EVALUATION) TO BE
GIVEN TO THE REQUESTOR (MAINTENANCE) AS SUCH, THE
RESPONSE WILL BE TREATED AS A TECHNICAL EVALUATION IAM

THE RESOLUTION OF THIS TECH EVAL WAS REVIEWED IN
ACCORDANCE WITH HU-AR-1212 AND FOUND TO HAVE A RISK
RANK OF 3. THEREFORE A THIRD PARTY REVIEW BY AN
INDUSTRY COATING EXPERT IS RECOMMENDED.

A. REASON FOR EVALUATION / SCOPE:

DURING VISUAL INSPECTIONS OF THE DRYWELL VESSEL
EXTERIOR COATING IN THE SANDBED REGIONS (BAYS 1, 7, 9 & 15)
AREAS WERE OBSERVED TO HAVE SEAMS/Voids. SPECIFICALLY,
THE AREAS WHERE THE EPOXY COATING REPAIRS WERE APPLIED
TO THE ORIGINAL CONCRETE FLOOR OR THE SIDE OF THE
HIGHIELD HAVE SEPARATED IN SPOTS. TO PREVENT WATER
FROM SEEPING UNDER THE EPOXY, AN EXPANDABLE FILLER
MATERIAL IS REQUIRED FOR THE SEAMS/Voids.

THE SCOPE OF THIS TECH EVAL IS TO PROVIDE GUIDANCE ON
FILLING THE SUBJECT SEAMS/Voids.

B. DETAILED EVALUATION:

IN 1992, THE EPOXY COATING WAS APPLIED TO THE FLOOR IN
AREAS WHERE IT WAS UNEVEN, SO THAT ANY WATER ENTERING
THE SANDBED WOULD FLOW AWAY FROM THE VESSEL AND BE
ROUTED TO THE DRAINS. SINCE 1996, INSPECTIONS HAVE
FOUND INDICATIONS OF THE EPOXY SEPARATING FROM THE
CONCRETE. THIS SEPARATION COULD BE CAUSED BY THE
CONCRETE SWELLING (EXPANDING AND CONTRACTING) OVER
TIME.
**ACTION REQUEST**

**A/R TYPE**: CM ECR

**REQUEST ORG**: CED

**REQUEST DATE**: 21OCT06

**REQUESTED BY**: TAMBURRO

**PRINT DATE**: 25OCT06

**A/R NUMBER**: A2152754

**A/R STATUS**: ASIGN

**STATUS DATE**: 23OCT06

**LAST UPDATE**: 28OCT06

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THE DRYWELL IS CLASSIFIED AS SAFETY RELATED. THE CONCRETE FLOOR IN QUESTION DOES NOT HAVE A SAFETY RELATED FUNCTION. THE FUNCTION OF THE FLOOR IS TO ROUTE WATER THAT MAY ENTER THE SANDiek TO THE FIVE EQUALLY SPACED DRAIN LINES AND KEEP THE WATER AWAY FROM THE DRYWELL VESSEL.

THE SEPARATED SEAMS COULD POTENTIALLY ALLOW SOME WATER TO GET UNDER THE EPOXY COATING REPAIR. PLEASE NOTE THAT INSPECTION OF THESE BAYS SHOWS NO DEGRADATION DRYWELL COATING OR THE CAULKING BETWEEN THE VESSEL AND THE DRYWELL. SEPARATED SEAMS ARE LOCATED AWAY FROM THE DRYWELL VESSEL AND ARE LOCATED NEAR THE CONCRETE BTO SHIELD.

THE EPOXY THAT WAS USED IN THE EARLIER REPAIR IS DEVON 184 EPOXY COATING WITH A DEROG PREPRIME 167 SEALER.

BASED ON THE CONDITIONS AND MATERIAL, THE RECOMMENDED FILLER SEALANT TO USE IS SIKAFLEX TEXTURED SEALANT. THIS PRODUCT IS RECOMMENDED BY THE WILLIAM COATINGS GROUP AND IS TYPICALLY USED TO SEAL CONCRETE TO EPOXY JOINTS.

THE SEALANT SHALL BE APPLIED PER THE MANUFACTURERS INSTRUCTIONS. ATTACHED IS THE TECHNICAL DATA SHEET FOR THE PRODUCT (SEE EVAL ATTACHMENT 1).

AS PER ENGINEERING STANDARD ES-027, THE ENVIRONMENTAL PARAMETERS OF THE DRYWELL (ZONE 1) ARE AS FOLLOWS:

1) NORMAL PLANT OPERATING:
   - AGING TEMP = 139 DEG F
   - RADIATION = 20 E06 RADS
   - HUMIDITY = 50 %
   - PRESSURE = 16 PSIA

2) DESIGN BASIS ACCIDENT:
   - AGING TEMP = 317 DEG F
   - RADIATION = 32 E06 RADS
   - HUMIDITY = SUBMERGENCE
   - PRESSURE = 53.4 PSIA

THE TECHNICAL DATA SHEET (ATTACHMENT 1) INDICATES THAT SEALANT IS ACCEPTABLE FOR A SERVICE RANGE OF -40F TO 170F AND IS WHETHER RESISTANT. THEREFORE THE SEALANT WILL NOT DEGRADE OVER TIME DUE TO TEMPERATURE AND HUMIDITY. THE SEALANT IS NOT REQUIRED TO PERFORM ITS FUNCTION DURING THE DESIGN BASIS ACCIDENT. THEREFORE IT IS NOT REQUIRED TO PERFORM ITS FUNCTION DURING THE DESIGN BASIS ACCIDENT.
THE DESIGN BASIS ACCIDENT PARAMETERS IN ES-027 ARE NOT APPLICABLE.

THE MATERIAL IS A POLYURETHANE BASED PRODUCT MATERIAL AND IS EXPECTED TO HOLD UP WELL UNDER ABOVE NORMAL OPERATING RADIATION EXPOSURE.

C. CONCLUSION / FINDINGS:

BASED ON THE ABOVE EVALUATION, SIKAFLEX - TEXTURED SEALANT IS AN ACCEPTABLE FILLER MATERIAL FOR THE SEPARATIONS/VOIDS IN THE RAYS.

IT IS NOTED THAT THE SIKAFLEX TEXTURED SEALANT IS DESIGNED FOR ALL TYPES OF JOINTS, WHERE THE MAX AND MIN DEPTHS DO NOT EXCEED 1/2" OR 1/4" RESPECTIVELY. ANYTHING BEYOND THESE VALUES HAS THE POTENTIAL OF DEGRADING.

LIMITATIONS ARE AS FOLLOWS:

1) AFFECTED AREAS ARE PROPERLY PREPARED AS STATED ABOVE.
2) APPROPRIATE CURE TIMES ARE ADHERED TO.
3) THE SEALANT IS APPLIED PER THE MANUFACTURERS INSTRUCTIONS.


D. REFERENCES:

1) TR/CR # 00546932
2) ENG STD ES-027 REV. 4
3) SPECIFICATION # SP-1302-32-035 REV. 0

E. LIST OF ATTACHMENTS (TO BE CMT'D WITH EVAL TO RM):

1) SIKAFLEX PRODUCT DATA SHEET (2 PAGES)
2) SIKAFLEX MSDS SHEET (5 PAGES)

RESPONSE PREPARED BY: PETE TAMBURRO
CO-PREPARED BY: TEDD NICKERSON 10/23/06

INDEPENDENT REVIEWER BY: HOPAT HO (TML) 10/23/06

THE TECH EVAL WAS REVIEWED TO DETERMINE WHETHER THE RESULTS ARE REASONABLE. ANY CONCERNS WERE DISCUSSED WITH CO-ORIGINATOR OF THIS TECH. EVAL AND RESOLUTIONS HAVE BEEN INCORPORATED.
VERIFIER CONCURS WITH ORIGINATOR.

BASED ON THIS EVALUATION, THE TECH. EVAL. IS VERIFIED TO BE ACCEPTABLE.

THIS TECH EVAL WAS REVIEWED BY JON CAVALLO (THIRD PARTY REVIEW) AND FOUND TO BE ACCEPTABLE. ATTACHMENT provides an email documenting his review.

THIS TECHNICAL EVALUATION HAS BEEN REVIEWED AND APPROVED BY ENGINEERING MANAGEMENT. IT MEETS THE REQUIREMENTS OF CO-RA-308-101 AND HU-RA-1212. S. HUTCHINS (10/25/06)
Exhibit

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