

**RESPONSE TO FREEDOM OF  
INFORMATION ACT (FOIA) / PRIVACY  
ACT (PA) REQUEST**

2013-0030

2

RESPONSE  
TYPE☐ FINAL☒ PARTIAL

REQUESTER

Teresa Manzi

DATE

MAY 29 2013

**PART I. -- INFORMATION RELEASED**

- ☐ No additional agency records subject to the request have been located.
- ☐ Requested records are available through another public distribution program. See Comments section.
- ☐ APPENDICES Agency records subject to the request that are identified in the listed appendices are already available for public inspection and copying at the NRC Public Document Room.
- ☒ APPENDICES Agency records subject to the request that are identified in the listed appendices are being made available for public inspection and copying at the NRC Public Document Room.
- ☒ C, D & E
- ☒ Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD 20852-2738.
- ☒ APPENDICES Agency records subject to the request are enclosed.
- ☒ C, D & E
- ☐ Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.
- ☒ We are continuing to process your request.
- ☒ See Comments.

**PART I.A -- FEES**

AMOUNT\*

\$

\* See comments  
for details

- ☐ You will be billed by NRC for the amount listed. ☐ None. Minimum fee threshold not met.
- ☐ You will receive a refund for the amount listed. ☐ Fees waived.

**PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE**

- ☐ No agency records subject to the request have been located. For your information, Congress excluded three discrete categories of law enforcement and national security records from the requirements of the FOIA. See 5 U.S.C. § 552(c) (2006 & Supp. IV (2010)). This response is limited to those records that are subject to the requirements of the FOIA. This is a standard notification that is given to all our requesters and should not be taken as an indication that excluded records do, or do not, exist.
- ☒ Certain information in the requested records is being withheld from disclosure pursuant to the exemptions described in and for the reasons stated in Part II.
- ☒ This determination may be appealed within 30 days by writing to the FOIA/PA Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Clearly state on the envelope and in the letter that it is a "FOIA/PA Appeal."

**PART I.C COMMENTS ( Use attached Comments continuation page if required)**

The incoming request located in ADAMS at ML12311A102.

Records have been sent to another office within the NRC and a licensee for review and release determination. You will be notified once this review has been completed.

Records with a ML Accession Number are publicly available in the NRC's Public Electronic Reading Room at <http://www.nrc.gov/reading-rm.html>. If you need assistance in obtaining these records, please contact the NRC's Public Documents Room (PDR) at 301-415-4737, or 1-800-397-4209, or by E-mail to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov).

SIGNATURE - FREEDOM OF INFORMATION ACT AND PRIVACY ACT OFFICER

Donna L. Sealing

**RESPONSE TO FREEDOM OF INFORMATION  
ACT (FOIA) / PRIVACY ACT (PA) REQUEST**

2013-0030

MAY 19 2013

**PART II.A -- APPLICABLE EXEMPTIONS**APPENDICES  
B, C, D

Records subject to the request that are described in the enclosed Appendices are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).

- ☐ Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- ☐ Exemption 2: The withheld information relates solely to the internal personnel rules and practices of NRC.
- ☐ Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
- ☐ Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
- ☐ Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
- ☐ 41 U.S.C., Section 4702(b), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- ☒ Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
- ☒ The information is considered to be confidential business (proprietary) information.
- ☐ The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.390(d)(1).
- ☒ The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.390(d)(2).
- ☐ Disclosure will harm an identifiable private or governmental interest.
- ☒ Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
- ☒ Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
- ☒ Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
- ☒ Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- ☒ Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- ☒ Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
- ☐ (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrong doing or a violation of NRC requirements from investigators).
- ☒ (C) Disclosure could constitute an unwarranted invasion of personal privacy.
- ☐ (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
- ☐ (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
- ☒ (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- ☒ OTHER (Specify)  
Outside Scope of Request; Copy Right Material

**PART II.B -- DENYING OFFICIALS**

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELLATE OFFICIAL		
			EDO	SECY	IG
Eric J. Leeds	Director, NRR		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

**APPENDIX C**  
**RECORDS BEING RELEASED IN THEIR ENTIRETY**  
**(If copyrighted identify with \*)**

<b><u>NO.</u></b>	<b><u>DATE</u></b>	<b><u>DESCRIPTION/(PAGE COUNT)</u></b>
1.	07/25/12	Email P. Briegleb to C. Sebastien et al., Subj: Potential problem on the reactor pressure vessel (RPV) of the Belgian Doel 3 NPP (3 pages)
2.	07/30/12	Email from M. Benson to M. Kirk, RE: RG 1.161 PVP Paper. (1 page)
3.	08/03/12	Email C. Roquecruz to J. Poehler, FW: REQUEST: Belgium – Meeting on 8/16 re Flaw indications in Doel 3 Reactor Pressure Vessel (3 pages)
4.	08/03/12	Email M. Kirk to M. Case, FW: URGENT Message on Nuclear Safety: Flaw indications in Doel 3 Reactor Pressure Vessel (8 pages)
5.	08/03/12	Email J. Collins to T. Lupold, FW: URGENT Message on Nuclear Safety: Flaw indications in Doel 3 Reactor Pressure Vessel (10 pages)
6.	08/06/12	Email from J. Poehler to D. Widrevitz, et al. RE: Answers to questionnaire 3 8 2012. (1 page)
7.	08/07/12	Email J. Collins to T. Lupold, FW: Potential problem on the reactor pressure vessel (RPV) of the Belgian Doel 3 NPP (5 pages)
8.	08/10/12	Email G. Shear to M. Ring, FW: REQUEST: Belgium – Meeting on 8/16 re Flaw indications in Doel 3 Reactor Pressure Vessel (5 pages)
9.	08/10/12	FANC Info sheet on the reactor and the reactor vessel (7 pages)
10.	08/12/12	Email S. Malik to RES_DE_CIB, Subject: Regulators to Discuss DOEL-3 Belgian Reactor Pressure Vessel Cracks. (3 pages)
11.	08/13/12	Email from D. Hills to S. Rosenberg, et al, FW: DOEL 3 (Belgium) Flaw Indications in the Reactor Pressure Vessel. (3 pages)
12.	08/13/12	Email J. Lara to C. Casto, FW: Doel 3 (Belgium) – Flaw Indications In The Reactor Pressure Vessel (4 pages)
13.	08/13/12	Email R. Guzman to J. Quichocho, RE: REQUEST: Belgium – Meeting on 8/16 re Flaw indications in Doel 3 Reactor Pressure Vessel (7 pages)
14.	08/13/12	Email J. Tsao to T. Lupold, Subj: Notes from the Branch chief meeting on 8/13/2012 (1 page)
15.	08/13/12	Email J. Poehler to R. Hardies, RE: ACTION: Followup of list of NPPs with

- RPVs forged by Rotterdam Dockyards (RDM) (4 pages)
16. 08/13/12 Email R. Hardies to J. Poehler, FW: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (4 pages)
  17. 08/13/12 Email J. Poehler to C. Fairbanks, Subj: Doel 3 issue – List of Plants with Forgings Manufactured by Rotterdam (2 pages)
  18. 08/13/12 Email C. Fairbanks to J. Poehler, RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (5 pages)
  19. 08/13/12 Email C. Fairbanks to J. Poehler, Subj: Watts Bar 2 did have a (joint) GL 92-01 response (2 pages)
  20. 08/13/12 Email C. Fairbanks to R. Hardies, RE: Rotterdam plants (1 page)
  21. 08/13/12 Email S. Meighan to J. Thompson et al., Subj: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (2 pages)
  22. 08/13/12 Email J. Poole to R. Guzman, RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (3 pages)
  23. 08/13/12 Email J. Poole to S. Meighan, RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (3 pages)
  24. 08/13/12 Email S. Lingam to S. Meighan, RE: RPV Material Issue (2 pages)
  25. 08/13/12 Q & A for Chairman Macfarlane on Cracks Found in Belgian Nuclear Plant Reactor Vessel for the August 14, 2012, National Press Club Media Roundtable (1 page)
  26. 08/14/12 Email G. Shear to M. Ring, FW: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (1 page)
  27. 08/15/12 Email S. Rosenberg to P. Hiland, RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (3 pages)
  28. 08/15/12 Email J. Hopkins to J. Poehler, Subj: QUESTION; Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (4 pages)
  29. 08/16/12 Email C. Roque-Cruz to J. Poehler, RE: Pressure Vessel Inspections (3 pages)
  30. 08/16/12 Email J. Poehler to C. Roque-Cruz, RE: Pressure Vessel Inspections (3 pages)
  31. 08/16/12 Email D. Hills to T. Lupold, RE: Doel 3 (Belgium) – Flaw Indications in the Reactor Pressure Vessel (4 pages)
  32. 08/16/12 Email P. Hiland to T. Lupold, Subj: Doel 3 followup (1 page)
  33. 08/16/12 Email J. Poehler to J. Hopkins, RE: QUESTION: Followup of list of NPPs

- with RPVs forged by Rotterdam Dockyards (RDM) (5 pages)
34. 08/16/12 Email J. Hopkins to J. Poehler, RE: QUESTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM) (5 pages)
  35. 08/17/12 Email from M. Benson to M. Kirk, RE: What is the unit "nvt", relative to neutron exposure? (1 page)
  36. 08/17/12 Email from M. Benson to M. Kirk, RE: what is the unit "nvt", relative to neutron exposure? (1 page)
  37. 08/21/12 Email D. Hills to V. Meghani, FW: Doel 3 (Belgium) – Flaw Indications in the Reactor Pressure Vessel (4 pages)
  38. 08/23/12 Email from M. Benson to M. Kirk, Subject: Throwing a Dart at FAVOR. (1 page)
  39. 08/27/12 Email from M. Benson to M. Kirk, RE: Throwing a Dart at FAVOR. (1 page)
  40. 08/27/12 Email from A. Cinson to G. Oberson, Subject: RE: publication of nozzle 63 NUREG/CR (1 page)
  41. 08/27/12 Email from C. Fairbanks to M. Kirk, Comments – RE: RESEND: draft slides for 8/28 public meeting (7 pages)
  42. 09/05/12 Email from S. Crawford to G. Oberson, Subject: RE: publication of nozzle 63 NUREG/CR (1 page)
  43. 09/05/12 Email from J. Collins to M. Thadani & Justin Poole, Subject: NUREG CR-7142 on Volumetric Leak Path Assessment (1 page)
  44. 09/05/12 Email from A. Csontos to J. Dion, RE: Research Assistance Request. (2 pages)
  45. 09/05/12 Email from A. Csontos to S. Richards, RE: Research Assistance Request. (2 pages)
  46. 09/07/12 Email from D. Garmon to J. Poehler, RE: Research on Hydrogen Cracking in Reactor Vessels Related to Doel 3. (1 page)
  47. 09/11/12 Email from A. Csontos to C. Brown, RE: Large NSSS Component Fabrication and Inspection. (2 pages)
  48. 09/11/12 Email from A. Csontos to S. West, RE: RES Response to NRR Research Assistance Request on DOEL 3 Reactor. (1 page)
  49. 09/12/12 Email A. Csontos to M. Case, RE: Large NSSS Component Fabrication and Inspection. (2 pages)
  50. 09/12/12 Email from G. Cheruvenki to R. Guzman, RE: VY steam dryer. (1 page)

51. 09/13/12 Email from A. Csontos to M. Case, FW: Briefing. (1 page)
52. 09/13/12 Email from A. Csontos to R. Hardies, FW Request for Approval of Foreign Travel to attend DOEL Technical Work Groups. (2 pages)
53. 09/13/12 Email from A. Csontos to J. Uhle, RE Request for Approval of Foreign Travel to attend DOEL Technical Work Groups. (3 pages)
54. 09/13/12 Email from R. Guzman to S. Sheng, et al, RE VY Steam Dryer Cracks. (1 page)
55. 09/13/12 Email M. Kirk to P. Labeau, RE: Doel 3 International Committee (2 pages)
56. 09/14/12 Email from G. Cheruvenki to R. Guzman on Environmental Evaluation for VY Steam Dryer Amendment (1 page)
57. 09/17/12 An Ultrasonic Leak Path Assessment of a Pressurized Water Reactor Control Rod Drive Mechanism Nozzle (12 pages)
58. 09/17/12 Email from J. Poehler to E. Reichelt, et al, on New Reactors Audits of Forging Producers. (1 page)
59. 09/18/12 Email from J. Poehler to E. Reichelt, RE: New Reactors Audits of Forging Producers. (1 page)
60. 09/19/12 Email from A. Csontos to R. Hardies, Accepted: FW: Recap of DOEL 3. (1 page)
61. 09/20/12 Email from M. Kirk to R. Hardies, et al, on hydrogen flake papers. (1 page)
62. 09/21/12 Article from Keene Sentinel. (1 page)
63. 09/24/12 Meeting Notice on Vermont Yankee LAR – Steam Dryer Review. (3 pages)
64. 09/26/12 Email from J. Poehler to R. McIntyre, RE: Japan Steel Works Info Related to Forging Practices. (2 pages)
65. 09/26/12 Email from A. Csontos to C. Brown, RE: reducing the susceptibility of cracking in alloy 690. (2 pages)
66. 09/27/12 Email from J. Poehler to G. Stevens, RE: Metallurgy of Hydrogen Flaking Document – for DOEL 3 Meeting. (3 pages)
67. 09/27/12 Email from A. Csontos to S. Richards, RE: Counterintelligence (CI) Travel Briefings and Debriefings (3 pages)
68. 09/28/12 Email from G. Oberson to J. Collins, Subject: journal article on Nozzle 63 work (1 page)

69. 10/02/12 Email from A. Csontos to R. Hardies, Accepted: ACRS presentation on the DOEL3 indications. (1 page)
70. 10/03/12 Email from R. Guzman to G. Cheruvenki, RE: VY Steam Dryer cracking. (1 page)
71. 10/04/12 Organizer: A. Csontos, Subject: ACRS Meeting on DOEL-3 Indications. (1 page)
72. 10/04/12 Email from N. Sheehan to H. Gray, et al, RE: Newspaper Opinion Article. (2 pages)
73. 10/04/12 Email from T. Burns to S. Rutenkroger, RE: Newspaper Opinion Article. (1 page)
74. 10/04/12 Email from H. Gray to R. Hardies, RE: Newspaper Opinion Article. (1 page)
75. 10/04/12 Email from T. Setzer to S. Rutenkroger, RE: Newspaper Opinion Article. (1 page)
76. 10/04/12 Email from S. Rutenkroger to R. Bellamy, FW: Newspaper Opinion Article. (1 page)
77. 10/04/12 Email from R. Guzman to T. Setzer, RE: Newspaper Opinion Article. (2 pages)
78. 10/05/12 Email from S. Rutenkroger from R. Bellamy, FW: Newspaper Opinion Article. (3 pages)
79. 10/09/12 Email Van Wonterghem to [adrien.thibault@asn.fr](mailto:adrien.thibault@asn.fr) et al., RE: Doel 3 RPV Issue – Details on October 16<sup>th</sup> meeting – WGI: Non-Destructive Examination Techniques (3 pages)
80. 10/10/12 Email from A. Csontos to M. Kirk, RE: Task Request: Task DOEL 3. (3 pages)
81. 10/10/12 Email from R. Hardies to C. Fairbanks, FW: EPRI Questions to Electrabel. (1 page)
82. 10/11/12 Email from A. Csontos to S. Rosenberg, RE: RIC. (1 page)
83. 10/16/12 Email from A. Csontos to T. Clark, RE: Westems discussion. (2 pages)
84. 10/17/12 Email from S. Freeman to S. Shaeffer, RE: laminations detected in Belgian reactor vessel (3 pages)
85. 10/25/12 Email from A. Csontos to G. Stevens, RE: DOEL 3 one pager update in September. (1 page)
86. 10/25/12 Email from M. Kirk to A. Csontos, RE: roles and responsibilities. (3 pages)

- 87. 10/26/12 Email from A. Csontos to M. Kirk, RE: roles and responsibilities. (4 pages)
- 88. 11/01/12 Originator: Gary Stevens, Subject: DOEL 3 Brief/Next Steps Meeting. (1 page)
- 89. 11/04-08/12 Presentation (Phoenix, AZ) by M. Benson – Subject: ASME Code Section XI Nonmandatory Appendix K Update. (4 pages)

**APPENDIX D  
RECORDS BEING WITHHELD IN PART  
(If copyrighted identify with \*)**

<b><u>NO.</u></b>	<b><u>DATE</u></b>	<b><u>DESCRIPTION/(PAGE COUNT)/EXEMPTIONS</u></b>
1.	UNDATED	Doel Debrief (1 page) / <b>EX 4</b>
2.	UNDATED	Metallurgical Aspects Influencing the Potential for Hydrogen Flaking in Forgings for Reactor Pressure Vessels (26 pages) / <b>EX 4, 5</b>
3.	01/2012	JCN-N6783 Properties of CRDM Welds (5 pages) / <b>EX 4</b>
4.	01/11/12	Email J. Poehler to J. Kim, RE: Draft Follow-Up RAI for Core Plate Bolt Analysis (1 page) / <b>EX 6</b>
5.	01/17/12	Email B. Hanson to G. Oberson et al., RE: draft NUREG (1 page) / <b>EX 6</b>
6.	01/26/12	Email T. Nazario to R. Haag, Subj: Mockup for RPV Stud Hole Sleeving (2 pages) / <b>EX 4</b>
7.	01/26/12	Email T. Nazario to D. Failla, FW: Mockup for RPV Stud Hole Sleeving (2 pages) / <b>EX 4</b>
8.	01/31/12	Email B. Hanson to G. Oberson, Subj: You have files ready for pickup (1 page) / <b>EX 6, 7F</b>
9.	02/2012	JCN-N6783 Properties of CRDM Welds (5 pages) / <b>EX 4</b>
10.	02/13/12	, RE: follow up on draft NUREG and contract status (3 pages) / <b>EX 4</b> Email B. Hanson to G. Oberson
11.	02/14/12	Email G. Oberson to B. Hanson, RE: follow up on draft NUREG and contract status (3 pages) / <b>EX 4</b>
12.	02/15/12	Email A. Cinson to G. Oberson, RE: follow up on draft NUREG and contract status (4 pages) / <b>EX 4</b>

13. 02/16/12 Email B. Hanson to G. Oberson, RE: N6783 SOW modifications (1 page) / **EX 4**
14. 02/23/12 Email B. Hanson to G. Oberson, RE: N6783 SOW modifications (2 pages) / **EX 4,6**
15. 02/23/12 Email R. Haag to T. Nazario, RE: Mockup for RPV Stud Hole Sleeving (2 pages) / **EX 6**
16. 03/2012 JCN-N6783 Properties of CRDM Welds (5 pages) / **EX 4**
17. 04/2012 JCN-N6783 Properties of CRDM Welds (5 pages) / **EX 4**
18. 04/05/12 Email J. Poehler to J. Wiebe et al., RE: Quad Cities Unit 2 Instrument Line Repair Relief Request Information (2 pages) / **EX 6**
19. 04/10/12 Email M. Benson to G. Stevens et al., RE: J-R curve data (ferritic material focus) (3 pages) / **EX 6**
20. 04/16/12 Email J. Poehler to J. Wiebe, RE: Quad Cities Unit 2 Relief Request Verbal Authorization Call With Licensee (2 pages) / **EX 6**
21. 04/23/12 Email G. Oberson to J. Collins, RE: discussion of NA nozzle 63 (3 pages) / **EX 6**
22. 04/23/10 Email J. Collins to G. Oberson, RE: discussion of NA nozzle 63 (3 pages) / **EX 6**
23. 04/23/12 Email A. Cinson to G. Oberson, RE: Canceled: EPRI telecom on Nozzle 63 (1 page) / **EX 6**
24. 04/26/12 Email A. Cinson to G. Oberson, RE: CRDM-9<sup>th</sup> EPRI NDE Conference (1 page) **EX 6**
25. 04/26/12 Email J. Poehler to T. McLellan, RE: missed exam (2 pages) / **EX 6**
26. 04/30/12 Email T. Scarbrough to G. Cheruvenki, RE: 5/1 Review of VY Steam Dryer Inspection Reports at local NEI/NPOC Rockville Office (1 page) / **EX 6**

27. 04/30/12 Email R. Guzman to G. Cheruvenki et al., RE: 5/1 Review of VY Steam Dryer inspection Reports at local NEI/NPOC Rockville office (1 page) / **EX 6**
28. 05/2012 JCN-N6783 Properties of CRDM Welds (5 pages) / **EX 4**
29. 05/08/12 Email A. Cinson to G. Oberson, Subj: Nozzle 63 discussions (1 page) / **EX 6**
30. 05/10/12 Email A. Cinson to G. Oberson, RE: Nozzle 63 discussions (2 pages) / **EX 6**
31. 05/10/12 Email A. Cinson to G. Oberson, RE: Nozzle 63 discussions (2 pages) / **EX 6**
32. 05/10/12 Email A. Cinson to G. Oberson, RE: Nozzle 63 discussions (3 pages) / **EX 6**
33. 05/11/12 Email A. Cinson to G. Oberson, Subj: [Anthony.cinson@pnnl.gov](mailto:Anthony.cinson@pnnl.gov) is requesting files from you (1 page) **EX 7F**
34. 05/11/12 Email A. Cinson to G. Oberson, Subj: you have files ready for pickup (1 page) **EX 7F**
35. 05/16/12 Email A. Cinson to G. Oberson, Subj: You have files ready for pickup (1 page) **EX 7F**
36. 06/2012 JCN-N6783 Properties of CRDM Welds (5 pages) / **EX 4**
37. 06/14/12 Email A. Cinson to G. Oberson, Subj: CRDM Presentation (1 page) / **EX 6**
38. 06/19/12 Email S. Crawford to G. Oberson, Subj: You have files ready for pickup (1 page) **EX 7F**
39. 06/27/12 Email M. Benson to H. Rathbun, Subj: ORNL Models (1 page) **EX 7F**
40. 07/2012 JCN-N6783 Properties of CRDM Welds (5 pages) / **EX 4**
41. 07/05/12 Email B. Hanson to G. Oberson et al., RE: finalizing Nureg/CR (1 page)

## **EX 6**

- 42. 07/10/12 Email S. Crawford to G. Oberson, RE: review journal article (1 page) / **EX 6**
- 43. 07/25/12 Email R. Hardies to T. Lupold RE: REQUEST: Potential problem on the reactor pressure vessel (RPV) of the Belgian Doel 3 NPP (4 pages) **EX 6**
- 44. 08/02/12 Email R. Hardies to P. Hiland RE: INFO: Potential problem on the reactor pressure vessel (RPV) of the Belgian Doel 3 NPP (4 pages) **EX 6**
- 45. 08/03/12 Email J. Bartley to J. Zeiler, RE: laminations detected in Belgian reactor vessel (not good) (4 pages) / **EX 6**
- 46. 08/10/12 Email J. Poehler to R. Hardies, RE: More Belgian-related info (2 pages) / **EX 6**
- 47. 08/10/12 Email J. Poehler to P. Hiland, RE: More Belgian-related info (2 pages) / **EX 6**
- 48. 08/10/12 Email S. Burnell to J Poehler et al., RE: More Belgian-related info (2 pages) / **EX 6**
- 49. 08/10/12 Email J. Poehler to T. Lupold & P. Hiland, RE: rapidly moving media story (4 pages) / **EX 6**
- 50. 08/13/12 Email Van Wouterghem to [jean-luc.lachaume@asn.fr](mailto:jean-luc.lachaume@asn.fr) et al., Subj: Technical Meeting "indications in Doel 3 Reactor Pressure Vessel": August 16 (5 pages) **EX 6**
- 51. 08/14/12 Email N. DiFrancesco to J. McGhee, Subj: Quad Cities 2 – RPV Manufacturing (3 pages) **EX 6**
- 52. 08/14/12 Email M. Kirk to R. Hardies, FW: some information (4 pages) / **EX 6**
- 53. 08/16/12 Email A. Hull to D. Alley, Subj: as discussed yesterday; Regulators to Discuss DOEL-3 Belgian Reactor Pressure Vessel Cracks (3 pages) / **EX 6**

54. 08/16/12 Email R. Davis to J. Poole, RE: RPV Stud Holes and ASME Code Questions (Large File) (2 pages) / **EX 6**
55. 08/16/12 Email M. Cheek to R. Hardies et al., FW: REQUEST: Belgium – Meeting on 8/16 re Flaw indications in Doel 3 Reactor Pressure Vessel (8 pages) **EX 6**
56. 08/16/12 Email P. Hiland to T. Lupold et al., FW: REQUEST: Belgium – Meeting on 8/16 re Flaw indications in Doel 3 Reactor Pressure Vessel (7 pages) **EX 6**
57. 08/17/12 Email R. Hardies to P. Hiland FW: Doel 3 RPV Working meeting August 16: Handouts & Start-up of working groups (82 pages) **EX 4, 6**
58. 08/21/12 Email R. Davis to S. Rosenberg, FW: RPV Stud Holes and ASME Code Questions (Large File) (3 pages) / **EX 6**
59. 08/22/12 Email T. Griesbach to J. Poehler, RE: EPRI Report on RV Fabrication (1 page) **EX 6**
60. 08/22/12 Teleconference Call Memo (2 pages) / **EX 6, Outside Scope**
61. 08/23/12 Email R. Hardies to J. Poehler, FW: potential problem on the reactor pressure vessel (RPV) of the Belgian Doel 3 NPP (3 pages) **EX 6**
62. 08/23/12 Email J. Poehler to T. Griesbach, RE: EPRI Report on RV Fabrication (2 pages) / **EX 6**
63. 08/27/12 P. Hiland to M. Case, Subj: Research Assistance Request (1 page) / **EX 4**
64. 08/27/12 Email G. Stevens to R. Tregoning, Subj: ASME Code Meeting Report – Subgroup on Evaluation Standards (8 pages) / **EX 6**
65. 08/27/12 Email D. Hills to T. Bilik et al., FW: ASME Code Meeting Report – Subgroup on Evaluation Standards (8 pages) / **EX 6, Outside Scope**
66. 08/28/12 Email K. Johnson to J. Dion, RE: Research Assistance Request (2 pages) / **EX 6**
67. 08/28/12 Email J. Honcharik to A. Csontos et al., RE: ASME Code Meeting Report

– Subgroup on Evaluation Standards (8 pages) / **EX 6**

- 68. 08/29/12 Email M. Kirk to C. Nove, FW: Doel 3 (3 pages) / **EX 6**
- 69. 09/05/12 Email A. Csontos to J. Dion, RE: Research Assistance Request (3 pages) / **EX 5**
- 70. 09/06/12 Memo M. Case to P. Hiland, Subj: Response to Research Assistance Request to Assess The Implications Of The Indications Discovered In The Doel 3 Reactor Pressure Vessel In Belgium (NRR-2012-005) (RAR) (4 pages) / **EX 4**
- 71. 09/06/12 Email F. Brown to D. Failla, Nucleonics Week (12 pages) / **EX Copy Right**
- 72. 09/06/12 Email R. Hardies to M. Cheek et al., FW: Doel 3 RPV Issue: Terms of Reference & Next meeting (9 pages) **EX 4, 6**
- 73. 09/10/12 Email A. Csontos to G. Wilkowski et al., RE: North Anna Meeting (1 page) / **EX 6**
- 74. 09/11/12 Email A. Csontos to S. Richards et al., RE: Request for Approval of Foreign Travel to attend Doel Technical Work Groups (2 pages) / **EX 5**
- 75. 09/11/12 Email A. Csontos to S. West FW: RES response to research assistance request NRR-2012-005 (3 pages) / **EX 6**
- 76. 09/12/12 Email A. Csontos to S. DePaula, FW: Research Assistance Request (2 pages) / **EX 5**
- 77. 09/13/12 Email A. Csontos to R. Hardies, RE: Large NSSS Component Fabrication and Inspection (2 page) / **EX 6**
- 78. 09/13/12 Email A. Csontos to E. Hackett et al., RE: recent vessel flaw findings at Doel (3 pages) / **EX 6**
- 79. 09/14/12 Email A. Csontos to M. Kirk et al., RE: PTS NUREG (1 page) / **EX 6**
- 80. 09/14/12 Email A. Csontos to M. Kirk, RE: Doel – request from FANC (1 page) / **EX**

81. 09/17/12 Email A. Csontos to E. Focht & G. Stevens, RE: EPRI materials meeting (2 page) / **EX 6**
82. 09/17/12 Email C. Basavaraju to G. Cheruvenki, RE: VY steam dryer cracking (1 page) / **EX 6**
83. 09/17/12 Email H. Gray to J. Trapp, FW: NRC Daily Notes for September 14, 2012 (2 pages) / **EX 6 & Outside Scope**
84. 09/19/12 Email A. Csontos to D. Dunn & G. Stevens, RE: Doel 3 Information (3 pages) / **EX 4, 6 & Outside Scope**
85. 09/19/12 Email A. Csontos to M. Kirk, RE: Tomorrow (2 pages) / **EX 6**
86. 09/20/12 Email A. Csontos to M. Gavrilas et al., RE: impressions of the LWRS workshops (2 pages) / **EX 5**
87. 09/21/12 Email M. Kirk to R. Hardies et al., Subj: Date for Doel 3 International Committee meeting (1 page) **EX 6**
88. 09/25/12 Email A. Csontos to M. Kirk, RE: Any chance someone from your branch could do the DE technical presentation at the monthly meeting next Monday? (1 page) / **EX 6**
89. 09/26/12 Email A. Csontos to R. Hardies, RE: FOIA Question (2 pages) / **EX 6**
90. 09/26/12 Email M. Kirk to J. Poehler, RE: Metallurgy of Hydrogen Flaking Document – for Doel 3 Meeting (1 page) / **EX 6**
91. 09/27/12 Email G. Kulesa to T. Lupold, RE: Region 1 Support (1 page) / **EX 6**
92. 09/28/12 Email A. Csontos to J. Dion, RE: Urgent Action: FW: Resent with Revised Due dates: ACTION: Operating Reactors Sequestration Exercise ( 6 pages) / **EX 5**
93. 10/04/12 Email A. Csontos to C. Nove RE: today (1 page) / **EX 6**

94. 10/04/12 Email A. Csontos to E. Hackett et al., Subj: Sorry that I missed your phone call. If you still need some clarification on handling the Doel info, LMK (EOM) (1 page) / **EX 6**
95. 10/04/12 Email A. Csontos to M. Kirk RE: WG3 meeting 2012\_10\_16 detailed description of topics hardies first cut (4 pages) / **EX 6**
96. 10/04/12 Email R. Hardies to H. Gray RE: Newspaper opinion article RE reactor vessel cracks (2 pages) / **EX 5, 6**
97. 10/04/12 Email S. Rutenkroger to H. Gray RE: Newspaper opinion article RE reactor vessel cracks (2 pages) / **EX 6**
98. 10/04/12 Email H. Gray to T. Lupold, FW: Newspaper opinion article RE reactor vessel cracks (2 pages) / **EX 6**
99. 10/04/12 Email M. Kirk to C. Fairbanks, Subj: Doel Q and A's (1 page) / **EX 6**
100. 10/10/12 Email A. Csontos to M. Case & G. Stevens, RE: Doel Update (2 pages) / **EX 5, 6**
101. 10/11/12 Email A. Csontos to G. Stevens, RE: for your consideration (2 pages) / **EX 4, 5 & 6**
102. 10/13-18/12 NRC International Travel Trip Report (7 pages) **EX 4, 5**
103. 10/18/12 Email A. Csontos to G. Stevens et al., RE: Please check the POW item (1 page) **EX 5, 6**
104. 10/22/12 NRC International Travel Trip Report (17 pages) / **EX 4, 5**
105. 10/22/12 NRC International Travel Trip Report (17 pages) / **EX 4, 5**
106. 10/23/12 Email A. Csontos to G. Stevens, RE: Q2-Q4 FY 13 International Travel due Oct 26 (4 pages) / **EX 5, 6**
107. 10/23/12 Email A. Csontos to R. Hardies et al., RE: Friendly Reminder: Trip Report Due (3 pages) / **EX 6**

108. 10/23/12 Email M. Anderson to C. Nove, RE: need help with IRSN terminology (1 page) / **EX 4, 5**
109. 10/23/12 Email A. Csontos to M. Kirk et al., RE: Slides for Brian on Thursday (2 pages) / **EX 6**
110. 10/23/12 Email A. Csontos to M. Kirk, RE: question on your edits (3 pages) / **EX 6**
111. 10/23/12 Email A. Csontos to M. Kirk & G. Stevens, RE: Doel 3 Sharepoint Site Permissions Changed (1 page) / **EX 6**
112. 10/23/12 Email T. Lupold to J. Trapp, RE: Vessel Flaws (1 page) / **EX 5**
113. 10/24/12 Email A. Csontos to G. Stevens & M. Kirk, RE: Doel phone call tomorrow (1 page) / **EX 6**
114. 10/25/12 Email M. Kirk to J. Ramsey & G. Fehst, Subj: Doel 3 review board meeting. (2 pages) / **EX 6**
115. 10/25/12 RES Management Briefing Indications in the Doel 3 (Belgium) Reactor Pressure Vessel (17 pages) / **EX 4**
116. 10/25/12 RES Management Briefing Indications in the DOEI 3 (Belgium) Reactor Pressure Vessel (9 pages) / **EX 4, 5**
117. 10/26/12 Email M. Kirk to Mark, FW: Doel 3 review board meeting (2 pages) / **EX 6**
118. 10/26/12 Email M. Kirk to C. Nove & G. Stevens, RE: Nondestructive Examination of VB395 block (2 pages) / **EX 4, 5**
119. 10/30/12 Email M. Kirk to P. Labeau et al., Subj: some comments on Tractebel documents (15 pages) / **EX 4, 5**
120. 10/30/12 Email M. Kirk to G. Stevens, RE: Doel 3 Brief/Next Steps – RESCHEDULED (again) Due to Sandy (1 page) / **EX 6**

**APPENDIX E  
RECORDS BEING WITHHELD IN THEIR ENTIRETY**

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/(PAGE COUNT)/EXEMPTIONS</u>
1.	undated	Photos from AREVA. (2 pages) <b>Exemption 4</b>
2.	undated	Transienten met mogelijke impact op RPV D3. (8 pages) <b>Exemption 4</b>
3.	undated	Questions/Answers on Rotterdam Dockyards (RDM). (2 pages) <b>Exemption 4</b>
4.	undated	Slides on DOEL 3 RPV – Status of preliminary contacts with foreign experts. (5 pages) <b>Exemption 4</b>
5.	undated	Technical Information concerning Reactor Vessel Doel 3. (3 pages) <b>Exemption 4</b>
6.	undated	Indications in the Reactor Reactor Pressure Vessel at Doel-3. (2 pages) <b>Exemption 4</b>
7.	undated	Meeting summary FANC and Doel Presentation of Defects Identified During NDE Examination of Reactor Vessel Forgings. (4 pages) <b>Exemption 4</b>
8.	undated	Flaws indications in the reactor pressure vessel. (5 pages) <b>Exemption 4</b>
9.	undated	Attachment 1 – Evaluation to Support Qualified Visual Inspections of the Reactor Vessel Heads (Proprietary) (72 pages) <b>Exemption 4</b>
10.	undated	Technical Information concerning Reactor Vessel Doel 3. (3 pages) <b>Exemption 4</b>
11.	undated	Technical Expert working groups in support of Belgian nuclear safety authorities. (6 pages) <b>Exemption 4</b>
12.	undated	2011 Mid-Cycle Plant Performance Summary Watts Bar Nuclear Power Station – Unit 2 Assessment Period: 07/01/2011 – 12/31/2011 (18 pages) <b>EX 5</b>
13.	undated	Pressure Vessel Diagram (1 page) <b>EX 4</b>
14.	undated	Article NB-4000 – Fabrication and Installation (3 pages) <b>EX Copy Right Law</b>

15.   undated       Assessment of MRP-250 Proposal for Revision of ASME SC-XI Appendix G (4 pages) **EX 4**
16.   undated       Explanation for Results of Geometrical Sensitivity Analysis BWR2 (3 pages) **EX 4**
17.   undated       Draft Oyster Creek, Appendix: H (Scripts To Extract Conditional Probability of Initiative and Conditional Probability of Failure Values from FAVPFM Output Files) (18 pages) **EX 4**
18.   undated       Draft: Beaver Valley, Appendix G (Verification of Oak Ridge National Laboratory Boiling Water Reactor Cool down Heat up, and Leak Test P-T Curves) (22 pages) **EX 4**
19.   undated       Draft: Figure F-7 Palisades; Cooldown Curves (20 pages) **EX 4**
20.   undated       Draft: Appendix D – Table C-5 Conditional Probability of Initiation and Failure of Category B Surface Breaking Flaws in Pressurized Water Reactors at 200 Effective Full Power Years (17 pages) **EX 4**
21.   undated       Appendix G Selected Output from FAVOR (33 pages) **EX 4**
22.   undated       Appendix A FAVload Input File: 3.2 Embrittlement Trend Curves (32 pages) **EX 4**
23.   undated       Table 2-8. Trend Curve Number 3 (Subroutine TCURVE3) (22 pages) **EX 4**
24.   undated       FANC - Incident at Doel nuclear power station (7 pages) **EX 4**
25.   undated       Doel 3 – Q & A (4 pages) **EX 4**
26.   02/18/11       Letter To Shah N. Malik, From Todd Mintz, CNWRA. Subj: Intermediate Milestone 15948.01.001.100, Technical Letter Report – Verification and Validation of FAVOR Version 09.1 Code (Task 1) (24 pages) **EX Outside Time Frame**
27.   04/2012       Draft Regulatory Guide DG-1299 (20 pages) **EX 5**
28.   04/14/12       Letter from D. Gullott, Exelon to NRC on Response to Request for Additional Information Regarding Relief Request 14R-19, Additional Followup Question Regarding the Flaw Evaluation, (39 pages) **EX 4** (the non-proprietary version can be found at ML12108A026 on Appendix A)
29.   04/17/12       Appendix A – Derivation of the Statistical Test for Type D Deviations (9 pages) **EX 4**
30.   04/17/12       Table 5-5. Brittle Fracture Assessment for Plant J (15 pages) **EX 4**
31.   04/17/12       4.6 Considerations when Statistical Tests are Failed (16 pages) **EX 4**

32. 04/17/12 2 Overview of the Alternate PTS Rule 2.1 Background (19 pages)  
**EX 4**
33. 04/17/12 Draft NUREG-XXXX – Technical Basis for Regulatory Guidance  
on the Alternative PTS Rule, 10 CFR 50.61a (16 pages) **EX 5**
34. 05/2012 Agency personnel handwritten notes of business proprietary  
information (6 pages) **EX 4**
35. 05/30/12 Email G. Cheruvenki to R. Guzman, Subj: Vermont Yankee steam  
dryer (5 pages) **EX 5**
36. 05/30/12 Email G. Cheruvenki to R. Guzman, Subj: RE: Draft e-mail to  
Licensee (2 pages) **EX 5**
37. 05/30-6/1/12 Draft Slide Presentation of Evaluation of 10 CFR 50 Appendix G (4  
pages) **EX 5**
38. 06/22/12 RPV D3 T2 Justification approach (9 pages) **EX 4**
39. 06-07/2012 Summary of the Available information and preliminary evaluation  
by Bel V pertaining to the indications of defects found in the Doel 3  
RPV (3 pages) **EX 4**
40. 06/27/12 Email M. Benson to S. Malik, RE: Revised FAVOR 9.1 Sensitivity  
& QA Report under CNWRA/SwRI Project V6146 (2 pages) **EX 5**
41. 07/25/12 Email J. Collins to S. Sheng, FW: Potential problem on the reactor  
pressure vessel (RPV) of the Belgian Doel 3 NPP (4 pages) **EX 4, 5**
42. 07/31/12 International Incident Reporting System (IRS) # 8244 (5 pages) **EX 5**
43. 08/2012 Doel 3 Inspection Finding a status report August 2012 (6 pages)  
**EX 4**
44. 08/09/12 Email M. Benson to A. Csontos, RE: Urgent Message on Nuclear  
Safety: Flaw Indications in Doel 3 Reactor Pressure Vessel (3  
pages) **EX 4**
45. 08/10/12 Reactor Pressure Vessels (RPV) of Doel 3 and Tihange 2 –  
Summary table of delivery of the justification file for restart (1  
page) **EX 4**
46. 08/10/12 Reactor Pressure Vessels (RPV) of Doel 3 and Tihange 2 –  
Justification file for restart (1 page) **EX 4**
47. 08/10/12 Reactor Pressure Vessels (RPV) of Doel 3 and Tihange 2 –  
Justification file for restart (2 pages) **EX 4**

48. 08/14-18/12 NRC International Travel Trip Report (3 pages) **EX 4**
49. 08/16/12 External meeting report on Technical Working meeting on Doel 3 Reactor pressure vessel indications (Brussels) (4 pages) **EX 4**
50. 08/16/12 Quick Summary of Meeting with FANC, Brussels, BE (3 pages) **EX 4**
51. 08/16/12 Working meeting Doel 3 Reactor Pressure Vessel Flaws (15 pages) **EX 4**
52. 08/16/12 Doel 3 Technical Meeting "Reactor Pressure Vessel" (26 pages) **EX 4**
53. 08/16/12 Meeting Agenda (8 pages) **EX 4**
54. 08/16/12 Doel 3 RPV – Status of preliminary contacts with foreign experts (5 pages) **EX 4**
55. 08/17/12 Email M. Cheek to B. Boger, RE: Update on Doel-3 Issue (1 page) **EX 4**
56. 08/20/12 Email R. Hardies to C. Nove et al., FW: Doel 3 RPV Working meeting August 16: Handouts & Start-up of working groups (2 pages) **EX 4 & 6**
57. 08/22/12 Slides on Indications in Reactor Pressure Vessel Forgings (12 pages) **EX 4**
58. 08/27/12 Flaw Indications in the reactor pressure vessel of Doel 3 (6 pages) **EX 4**
59. 08/28/12 Email W. De Roovere to M. Kirk, Subj: International Review Board on the Doel 3 reactor vessel (2 pages) **EX 4**
60. 09/06/12 Doel 3 RPV issue – Proposal for Terms of Reference for expert groups (7 pages) **EX 4**
61. 09/07/12 Email F. Brown to D. Faila, FW: REQUEST: Belgium – Meeting on 8/16 re Flaw indications in Doel 3 Reactor Pressure Vessel (10 pages) **EX 4**
62. 09/07/12 Email A. Csontos to C. Nove et al., RE: Doel 3 RPV issue: Terms of Reference & Next meeting (3 pages) **EX 4**
63. 09/10/12 1.1.2 – Ultrasonic examination of core shells for underclad cracking synthesis report (17 pages) **EX 4**
64. 09/10/12 Email A. Csontos to W. Norris et al., RE: software (2 pages) **EX Outside the Scope**

- 65. 09/10/12 Email A. Csontos to S. Richards et al., RE: Doel 3 RPV issue: Terms of Reference & Next meeting (3 pages) **EX 4 & 6**
- 66. 09/11/12 Email A. Csontos to R. Hardies, RE: Doel 3 RPV Technical Synthesis note (2 pages) **EX 4, 5 & 6**
- 67. 09/11/12 Email A. Csontos to S. Richards, RE: Doel 3 Reactor Vessel International Review Board (4 pages) **EX 4 & 6**
- 68. 09/11/12 Email A. Csontos to G. Stevens RE: Carol Nove and Gary Stevens Foreign Travel Justification to Doel Technical Work Groups (4 pages) **EX 4 & 6**
- 69. 09/11/12 Email A. Csontos to S. Richards et al., Subj: Carol Nove & Gary Stevens Foreign Travel Justification to Doel Technical Work Groups (2 pages) **EX 5 & 6**
- 70. 09/12/12 Doel 3 RPV issue – Proposal for terms of Reference for the Independent International Expert Review team (3 pages) **EX 4**
- 71. 09/13/12 Posting to FANC website in French: Doel 3: les experts internationaux chares de la revision du dossier sont connus (3 pages) **EX 4**
- 72. 09/13/12 Email A. Csontos to S. Richards et al., RE: Doel 3 international committee (2 pages) **EX 4 & 5**
- 73. 09/27/12 Email W. De Roovere to M. Kirk, RE: Request for contract between NRC and FANC (2 pages) **EX 4 & 6**
- 74. 09/27/12 Email A. Csontos to S. Richards et al., RE: TASK: Doel 3 contract (4 pages) **EX 4 & 6**
- 75. 09/28/12 1.1.5 – Ultrasonic examination for laminar flaws – Synthesis report (23 pages) **EX 4**
- 76. 09/28/12 3.2.1 – Specification for the Mechanical tests to be performed on H1 nozzle cut out from Doel 3 Reactor Pressure Vessel nozzle shell (35 pages) **EX 4**
- 77. 10/02/12 Email F. Van Wonterghem to A. Thibault et al., Subj: Doel 3 RPV issue – Details on October 16<sup>th</sup> meeting (13 pages) **EX 4**
- 78. 10/02/12 Email F. Van Wonterghem to A. Thibault et al., RE: Doel 3 RPV Issue – Details on October 16<sup>th</sup> meeting (3 pages) **EX 4**
- 79. 10/02/12 3.2.2 – Specification for the Mechanical tests to be performed on the H1 nozzle cut out from Doel 3 Reactor Pressure Vessel nozzle shell at SCK-CEN (9 pages) **EX 4**
- 80. 10/03/12 3.1.1 – Note Areva on the metallurgical origin of the indication (PEEM-F 12.1190) (32 pages) **EX 4**

- 81. 10/03/12 3.2.4 – Specification for the operations and tests to be performed on a small block from the steam generator shell containing flaws (34 pages) **EX 4**
- 82. 10/03/12 3.2.3 – Specification for the Mechanical tests to be performed on the H2BQ3 nozzle cut out from a Reactor Pressure Vessel Nozzle shell (9 pages) **EX 4**
- 83. 10/03/12 3.2.5 – Specification for the Mechanical tests to be performed on spare surveillance block from Doel 3 Reactor Pressure Vessel at SCK-CEN (9 pages) **EX 4**
- 84. 10/04/12 2.1.2 – Doel 3 – Manufacturing of the reactor pressure vessel – Synthesis report (36 pages) **EX 4**
- 85. 10/04/12 2.1.5 – Tihange 2 – Manufacturing of the reactor pressure vessel – Synthesis report (36 pages) **EX 4**
- 86. 10/04/12 7.4.1 – Safety Referential : Doel Reactor Vessel Integrity of Doel 3 (English Version) (8 pages) **EX 4**
- 87. 10/04/12 Doel 3 & Tihange 2 RPV issue – Proposal for Terms of Reference for expert groups (7 pages) **EX 4**
- 88. 10/04/12 Email G. Roussel to R. Hardies et al., Subj: Doel 3 RPV issue – Expert working group no. 3 on structural integrity – Meeting of October 16, 2012 (8 pages) **EX 4**
- 89. 10/05/12 1.4.1 – KCD3/CNT2 RPV Inspections – Assessment of UT Inspection Sensitivity (LBE02612128) (26 pages) **EX 4**
- 90. 10/05/12 1.6.1 – Doel 3 – RPV Transition ring C0064 – Consistency of UT results (LBE02676489) (24 pages) **EX 4**
- 91. 10/05/12 3.4.2 – Hydrogen flaking in steel: Phenomenology, origin and influencing factors (LBE02656988) (21 pages) **EX 4**
- 92. 10/05/12 3.0.1 – Strategy of materials investigations (13 pages) **EX 4**
- 93. 10/05/12 4.0.1 – Calculations: RPV Doel 3 – Methodology for the justification of the indications in Doel 3 reactor pressure vessel (18 pages) **EX 4**
- 94. 10/05/12 4.2.1 – Calculations – RPV Doel 3 – ASME III Justification (18 pages) **EX 4**
- 95. 10/05/12 4.6.1 – Calculations: RPV Doel 3: Fatigue Crack Growth analysis (26 pages) **EX 4**
- 96. 10/05/12 Classificatiecode/Korte Titel: P0716/Transiënten met mogelijke impact op RPV D3 (9 pages) **EX 4**

97. 10/05/12 1.0.1 – RPV KCD3 CNT2 – Strategy on Ultrasonic Examinations (LEB02677196) (11 pages) **EX 4**
98. 10/09/12 Email A. Csontos to R. Tregoning et al., RE: Doel 3 RPV Issue – Expert working group no.3 on structural integrity – Meeting of October 16, 2012 (4 pages) **EX 4 & 6**
99. 10/09/12 Email F. Van Wonterghem to A. Zeman et al., Subj: Doel 3 RPV Issue – Details on Oct 16 Meeting – WG2: Metallurgical origin/root causes of the flaw indications (10 pages) **EX 4**
100. 10/09/12 Email Van Wonterghem to C. Nove, Subj: Doel 3 RPV Issue – WG1: Non-Destructive Examination Techniques (2 pages) **EX 4**
101. 10/09/12 Email F. Van Wonterghem to G. Stevens et al., Subj: Doel 3 RPV Issue – Expert working group no. 3 on structural integrity – Meeting of October 16, 2012 (3 pages) **EX 4**
102. 10/09/12 Email F. Van Wonterghem to A. Zeman et al., RE: Doel 3 RPV Issue – Details on Oct 16 meeting - WG2: Metallurgical origin/root causes of the flaw indications (10 pages) **EX 4**
103. 10/10/12 4.1.2 – Doel 3: Transients synthesis from the design transients manual (8 pages) **EX 4**
104. 10/10/12 Email G. Roussel to G. Stevens et al., Subj: Doel 3 Tihange 2 RPV Issue – Working Group nr3 meeting on October 16, 2012 – Introductory remarks (15 pages) **EX 4**
105. 10/11/12 Email G. Stevens to C. Nove et al., FW: The participation from JNES (1 page) **EX 4**
106. 10/11/12 Email J. Poehler to C. Fairbanks, FW: Doel 3 RPV Issue – Oct 16 meeting – WG2 (1 page) **EX 4**
107. 10/11/12 Email G. Stevens to C. Fairbanks et al., RE: SV: Doel 3 RPV Issue – Details on October 16<sup>th</sup> meeting – WG1: Non-Destructive Examination Techniques (5 pages) **EX 4 & 6**
108. 10/11/12 4.1.1 – Calculations: RPV Doel 3 – Input data and hypotheses for the Structural Integrity Assessment of the flaws (22 pages) **EX 4**
109. 10/11/12 Email A. Weyn to R. Sundberg, et al., RE: SV: Doel 3 RPV Issue – Details on October 16<sup>th</sup> meeting – WG1: Non-Destructive Examination Techniques (4 pages) **EX 4 & 6**
110. 10/12/12 Flaw indications in the reactor pressure vessel of Doel 3 and Tihange 2 (6 pages) **EX 4**
111. 10/15/12 4.3.5 – Calculations: RPV Doel 3 – Tihange 2: Methodology for the determination of the acceptable flaw sizes (25 pages) **EX 4**

112. 10/15/12 4.5.1 – 10CFR50.61a PTS study of the KCD3 Reactor Pressure Vessel Probabilistic approach (43 pages) **EX 4**
113. 10/15/12 Email M. Kirk to G. Fehst et al., Subj: Doel 3 International Review Board – Meeting Dates set (2 pages) **EX 4**
114. 10/15/12 Email M. Kirk to P. Labeau, et al., RE: Doel 3 – Tihange 2 Review Board meeting (2 pages) **EX 4**
115. 10/16/12 FANC Confidentiality Clause (1 page) **EX 4**
116. 10/16/12 Doel 3 & Tihange 2 RPV Issue: Regulatory Expert Working Groups Working meeting 10-16-2012 (4 pages) **EX 4**
117. 10/16/12 Doel 3 & Tihange 2 RPV Issue: Experts Working Group nr 3 Meeting 10-16-2012 Technical Exchange on topics 1 to 7 Comments/remarks from I. Simonovski (7 pages) **EX 4**
118. 10/16/12 Doel 3 & Tihange 2 RPV issue: Experts Working Group nr 3 Meeting 10-16-2012, Technical exchange on topics 1 to 7 (3 pages) **EX 4**
119. 10/16/12 Doel 3 & Tihange 2 RPV issue: Agenda of the meeting Brussels, October 16, 2012 (1 page) **EX 4**
120. 10/16/12 Doel 3 & Tihange 2 RPV issue: Objectives of the meeting Brussels, October 16, 2012 (5 pages) **EX 4**
121. 10/16/12 Swedish Regulatory View on Structural Integrity Issues for Flaws Detected During Operation in NPPs (6 pages) **EX 4**
122. 10/16/12 Doel 3 & Tihange 2 RPV issue: Experts Working Group nr 3, Technical exchange on topics 1 to 7 Comments/remarks from Carlos Anta Redondo (5 pages) **EX 4**
123. 10/16/12 Doel 3 & Tihange 2 RPV issue: Experts Working Group nr 3, Technical exchange on topics 1 to 7 Comments/remarks from S. Crombez, L. Streibig and F. Balestreri (6 pages) **EX 4**
124. 10/16/12 Doel 3 & Tihange 2 RPV issue: Experts Working Group nr 3, Technical exchange on topics 1 to 7 Comments/remarks from K. Hasegawa (6 pages) **EX 4**
125. 10/16/12 Doel 3 & Tihange 2 RPV issue: Experts Working Group nr 3, Technical exchange on topics 1 to 7 Comments/remarks from L. Lindhorst (4 pages) **EX 4**
126. 10/16/12 Reactor Pressure Vessels of Doel 3 and Tihange 2, Update & Justification Approach (14 pages) **EX 4**
127. 10/16/12 RPV-Base Material Inspection NPP Muhleberg, Technical Expert Working Group Doel 3 Issue (4 pages) **EX 4**

128. 10/16/12 Expert Working Group nr 1 – Non Destructive Examination techniques, Experiences of the WG members with respect to the observed phenomena (2 pages) **EX 4**
129. 10/16/12 Ringhals 2 – Qualification and Inspection of vessel shells (13 pages) **EX 4**
130. 10/16/12 Expert Working Group nr 3 on Structural Mechanics & Fracture Mechanics – Approach for Justification (7 pages) **EX 4**
131. 10/16/12 Doel 3 & Tihange 2 RPV issue: Introductory Remarks Brussels, October 16, 2012 (15 pages) **EX 4**
132. 10/17/12 Email B. Brickstad to G. Roussel et al., Subj: SV: Doel 3 Tihange 2 RPV Issue – Working Group nr 3 meeting on October 16, 2012 – introductory remarks (2 pages) **EX 4**
133. 10/17/12 Email G. Roussel to G. Stevens, Subj: ASME Section XI – proximity rules (1 page) **EX 4**
134. 10/18/12 Email G. Roussel to G. Stevens et al., Subj: Doel 3 and Tihange 2 RPV Issur – WG3 meeting of October 16, 2012 (1 page) **EX 4**
135. 10/18/12 Email G. Stevens to G. Roussel, RE: ASME Section XI – proximity rules (2 pages) **EX 4 & 6**
136. 10/18/12 Email G. Stevens to C. Nove et al., FW: Doel 3 and Tihange 2 RPV Issue – Working Group nr3 meeting on October 16, 2012 – introductory remarks (2 pages) **EX 4 & 6**
137. 10/19/12 Email G. Roussel to G. Stevens, RE: ASME Section XI – proximity rules (2 pages) **EX 4 & 6**
138. 10/22/12 Email M. Kirk to R. Hardies et al., Subj: resolution of permitted interactions between different review panels for Doel (6 pages) **EX 4 & 6**
139. 10/22/12 Email A. Csontos to R. Hardies, RE: Request for a favor (5 pages) **EX 4 & 6**
140. 10/24/12 Email G. Roussel to G. Stevens, RE: Doel 3 – Tihange 2 RPV issuemember 1 (2 pages) **EX 4 & 6**
141. 10/24/12 Email K. Hasegawa to B. Brickstad et al., RE: Doel 3 Tihange 2 RPV Issue – Working Group nr3 meeting on October 16, 2012 – introductory remarks (3 pages) **EX 4 & 6**
142. 10/25/12 Email P. Wilson to J. Trapp, FW: Doel 3 one pager update after October meeting (3 pages) **EX 4**
143. 10/25/12 Email S. Sheng to R. Guzman, Subj: Your comments on the format and wordings of the proposed condition on VY steam dryer

SE (8 pages) **EX 5**

- 144. 10/25/12 Doel 3 RPV Issue – Expert Working Group 3 – Structural Integrity (7 pages) **EX 4**
- 145. 10/26/12 4.2.2 – Calculations – RPV Tihange 2 – ASME III justification (14 pages) **EX 4**
- 146. 10/26/12 7.4.2 – Safety Referential : Tihange – Reactor Vessel Integrity of Tihange 2 (8 pages) **EX 4**
- 147. 10/29/12 1.3.2 – Capability and reliability evaluation of the Reactor Pressure Vessel base metal examinations conducted in Doel 3 and Tihange 2 (Areva-29467) (13 pages) **EX 4**
- 148. 10/29/12 4.1.2 – Doel 3: Transients synthesis from the design transients manual (14 pages) **EX 4**
- 149. 10/29/12 4.1.5 – Applicability of Doel 3 transients for Tihange 2 safety case (7 pages) **EX 4**
- 150. 10/30/12 4.1.4 – Calculations: RPV Tihange 2: Input data and hypotheses for the Structural Integrity Assessment (22 pages) **EX 4**
- 151. 10/30/12 4.3.7 – Calculations: RPV Doel 3 – Tihange 2: Methodology for grouping the flaw indications (22 pages) **EX 4**
- 152. 10/30/12 Email M. Kirk to P. Labeau, RE: Questions concerning our review (4 pages) **EX 4**
- 153. 10/31/12 1.1.7 – Ultrasonic examination for laminar flaws and underclad cracking – Synthesis report (21 pages) **EX 4**
- 154. 10/31/12 1.1.8 – Ultrasonic examination for laminar flaws and underclad cracking – Synthesis report (28 pages) **EX 4**
- 155. 10/31/12 1.5.1 – Evaluation of manufacturing & in-service inspection methods and results – Synthesis report (53 pages) **EX 4**
- 156. 10/31/12 Email G. Roussel to G. Stevens, RE: Doel 3 – Tihange 2 RPV Issue (2 pages) **EX 4 & 6**
- 157. 11/01/12 Email M. Kirk to G. Stevens, RE: Doel 3 – Tihange 2 RPV issue (3 pages) **EX 4, 5 & 6**
- 158. 11/01/12 Email G. Stevens to G. Roussel, RE: Doel 3 – Tihange 2 RPV issue (3 pages) **EX 4, 5, 6 & Outside Scope**
- 159. 11/05/12 Email M. Kirk to W. De Roovere et al., RE: Questions concerning our review (3 pages) **EX 4 & 6**
- 160. 11/05/12 Clarification about the Belgian Regulatory system for larger

nuclear installations, like NPPs (2 pages) **EX 4**

161. 11/05/12

Email M. Kirk to M. Kirk, FW: Questions concerning our review (6 pages) **EX 4 & 6**