

June 15, 2010

EA-08-204

Mr. R. P. Cochrane  
General Manager  
Babcock & Wilcox Nuclear Operations Group, Inc.  
P.O. Box 785  
Lynchburg, VA 24505-0785

SUBJECT: ORDER IMPOSING CIVIL MONETARY PENALTY - \$32,500

Dear Mr. Cochrane:

This refers to your letter dated March 31, 2010, in response to the Notice of Violation and Proposed Imposition of Civil Penalty (Notice) sent as an enclosure to our letter dated February 23, 2010. Our letter and Notice described a violation identified during a U. S. Nuclear Regulatory Commission (NRC) inspection conducted from March 23 through June 21, 2008, at your facility in Lynchburg, Virginia. The violation involved the failure to have adequate instructions in a facility operating procedure to neutralize acid spills. The violation was identified following an event on April 28, 2008, in which a process operator took inappropriate actions to neutralize a spill of hydrofluoric acid (HF) by adding sodium hydroxide (NaOH), a strong base, which reacted violently to the acid on the floor. The operator sustained an ocular exposure from the flash of HF that required medical attention. Notwithstanding the timely and effective emergency and medical response by Babcock & Wilcox Nuclear Operating Group (B&W) staff, the NRC considered the injury to the operator significant and under different circumstances, a more serious, long-lasting health effect could have occurred. Consequently, the violation was categorized at Severity Level III (SLIII) in accordance with the NRC Enforcement Policy.

As described in our February 23<sup>rd</sup> letter, a civil penalty is considered for any SLIII violation. Because the NRC determined that credit was warranted for your prompt and effective corrective actions in response to this event, a civil penalty would not normally be proposed. However, your facility had been the subject of escalated enforcement in the prior two years and further evaluation was required in accordance with the civil penalty assessment process described in the Enforcement Policy. Because this issue was identified as a result of an event, the NRC determined that credit was not warranted for identification and a civil penalty of \$32,500 was proposed.

In your response you denied the severity level of the violation and protested the civil penalty in whole.

After consideration of your response, we have concluded that, for the reasons given in the Appendix attached to the enclosed Order Imposing Civil Monetary Penalty, the violation occurred as stated in the Notice dated February 23, 2010, and that the severity level is correctly categorized at Severity Level III. Furthermore, after review of the additional information you provided, the NRC determined that mitigation of the proposed civil penalty, in whole or in part, is not warranted.

Accordingly, we hereby serve the enclosed Order on Babcock & Wilcox Nuclear Operations Group, Inc., (formerly BWX Technologies, Inc.), imposing a civil monetary penalty in the amount of \$32,500. Within 20 days of the date this Order is published in the Federal Register you must answer the Order in accordance with 10 CFR 2.202 and either: (1) pay the civil penalty in accordance with Section IV of the Order, or (2) request a hearing in accordance with Section V of the Order.

The NRC concluded that your root cause investigation was comprehensive and thorough and identified the factors which contributed to the event. Consequently, the NRC concluded that the immediate and long term corrective actions discussed in our February 23<sup>rd</sup> letter would correct the violation and should prevent recurrence. We will review the effectiveness of your corrective actions during subsequent inspections.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your answer to the Order will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. The Order will also be published in the Federal Register. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. The NRC also includes significant enforcement actions on its Web site (<http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/>).

Questions concerning this Order Imposing Civil Monetary Penalty should be addressed to Mr. John Wray, NRC Office of Enforcement, who can be reached at 301-415-1288 or via e-mail at [john.wray@nrc.gov](mailto:john.wray@nrc.gov).

Sincerely,

/RA/

Roy P. Zimmerman, Director  
Office of Enforcement

Enclosures:

1. Order Imposing Civil Monetary Penalty
2. NUREG/BR-0254 Payment Methods (Licensee only)
3. Appendix

cc w/encls:

Barry L. Cole, Manager  
Licensing and Safety Analysis  
Babcock & Wilcox Nuclear Operations Group, Inc.  
P.O. Box 785  
Lynchburg, VA 24505-0785

Leslie P. Foldesi, Director  
Bureau of Radiological Health  
Division of Health Hazards Control  
Department of health  
1500 East Main Street, Room 240  
Richmond, VA 23219

R. P. Cochrane

2

Accordingly, we hereby serve the enclosed Order on Babcock & Wilcox Nuclear Operations Group, Inc., (formerly BWX Technologies, Inc.), imposing a civil monetary penalty in the amount of \$32,500. Within 20 days of the date this Order is published in the Federal Register you must answer the Order in accordance with 10 CFR 2.202 and either: (1) pay the civil penalty in accordance with Section IV of the Order, or (2) request a hearing in accordance with Section V of the Order.

The NRC concluded that your root cause investigation was comprehensive and thorough and identified the factors which contributed to the event. Consequently, the NRC concluded that the immediate and long term corrective actions discussed in our February 23<sup>rd</sup> letter would correct the violation and prevent recurrence. We will review the effectiveness of your corrective actions during subsequent inspections.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your answer to the Order will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. The Order will also be published in the Federal Register. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. The NRC also includes significant enforcement actions on its Web site (<http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/>).

Questions concerning this Order Imposing Civil Monetary Penalty should be addressed to Mr. John Wray, NRC Office of Enforcement, who can be reached at 301-415-1288 or via e-mail at [john.wray@nrc.gov](mailto:john.wray@nrc.gov).

Sincerely,

/RA/

Roy P. Zimmerman, Director  
Office of Enforcement

cc w/encls:  
Barry L. Cole, Manager  
Licensing and Safety Analysis  
Babcock & Wilcox Nuclear Operations Group, Inc.  
P.O. Box 785  
Lynchburg, VA 24505-0785

Leslie P. Foldesi, Director  
Bureau of Radiological Health  
Division of Health Hazards Control  
Department of health  
1500 East Main Street, Room 240  
Richmond, VA 23219  
Docket No. 70-27 License No. SNM-42

- Enclosures:  
1. Order Imposing Civil Monetary Penalty  
2. NUREG/BR-0254 Payment Methods (Licensee only)  
3. Appendix

Distribution w/encls: (See page 3)  
OEMAIL  
PUBLIC

**X PUBLICLY AVAILABLE      X NON-SENSITIVE**

ADAMS: X Yes      ACCESSION NUMBER: ML101580256

OFFICIE	OE	OE:BC	NMSS	OGC	RII: ORA	OE:OD
NAME	JWray	NHilton	DDorman	CScott	/RA/ by VMcCree for LReyes	RZimmerman
DATE	6/7/2010	6/15/2010	6/10/2010	6/15/2010	6/10/2010	6/15/2010

**OFFICIAL RECORD COPY**

Distribution w/encls:

W. Borchardt, OEDO

M. Weber, OEDO

M. Virgilio, OEDO

C. Haney, NMSS

D. Dorman, NMSS

C. Scott, OGC

R. Zimmerman, OE

A. Campbell, OE

E. Julian, SECY

B. Keeling, OCA

Enforcement Coordinators

RI, RII, RIV

E. Hayden, OPA

C. McCrary, OI

H. Bell, OIG

J. Wray, OE

P. Habighorst, NMSS

M. Baker, NMSS

L. Reyes, RII

V. McCree, RII

J. Shea, RII

E. Cobey, RII

S. Vias, RII

C. Evans, RII

S. Sparks, RII

A. Gooden, RII

S. Subosits, RII

J. Ledford, RII

R. Hannah, RII

R. Trojanowski, RII

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of  
Babcock & Wilcox Nuclear  
Operations Group, Inc.  
Lynchburg, VA

Docket No. 70-27  
License No. SNM-42  
EA-08-204

ORDER IMPOSING CIVIL MONETARY PENALTY

I

Babcock & Wilcox Nuclear Operations Group, Inc., (Licensee) is the holder of Materials License No. SNM-42, approved for 20-year renewal by the Nuclear Regulatory Commission (NRC or Commission) on April 25, 2007. The license authorizes the Licensee to manufacture nuclear components for the government and commercial entities in accordance with the conditions specified therein.

II

An NRC inspection of the Licensee's activities was conducted from March 23 through June 21, 2008, at its Lynchburg, Virginia facility. The results of this inspection indicated that the Licensee had not conducted its activities in full compliance with NRC requirements. A written Notice of Violation and Proposed Imposition of Civil Penalty (Notice) was served upon the Licensee by letter dated February 23, 2010. The Notice stated the nature of the violation, the provision of the NRC's requirements that the Licensee violated, and the amount of the civil penalty proposed for the violation.

The Licensee responded to the Notice in a letter dated March 31, 2010. In its response, the Licensee denied the severity level of the violation and protested the civil penalty in whole.

### III

After consideration of the Licensee's response and the statements of fact, explanation, and argument for mitigation contained therein, the NRC staff has determined, as set forth in the Appendix to this Order, that the violation occurred as stated and that the civil penalty in the amount of \$32,500 should be imposed.

### IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The Licensee shall pay a civil penalty in the amount of \$32,500 within 20 days of the date this Order is published in the Federal Register, in accordance with NUREG/BR-0254. In addition, at the time payment is made, the licensee shall submit a statement indicating when and by what method payment was made, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738.

### V

In accordance with 10 CFR 2.202, the licensee must, and any other person adversely affected by this Order may, submit an answer to this Order within 20 days of its publication in the Federal

Register. The answer should be sent to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission.

In addition, the licensee and any other person adversely affected by this Order may request a hearing on this Order within 20 days of its publication in the Federal Register. Where good cause is shown, consideration will be given to extending the time to answer or request a hearing. A request for extension of time must be directed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, and include a statement of good cause for the extension.

All documents filed in NRC adjudicatory proceedings, including a request for hearing, a petition for leave to intervene, any motion or other document filed in the proceeding prior to the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities participating under 10 CFR 2.315(c), must be filed in accordance with the NRC E-Filing rule (72 FR 49139, August 28, 2007). The E-Filing process requires participants to submit and serve all adjudicatory documents over the internet, or in some cases to mail copies on electronic storage media. Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, at least 10 days prior to the filing deadline, the participant should contact the Office of the Secretary by e-mail at [hearing.docket@nrc.gov](mailto:hearing.docket@nrc.gov), or by telephone at (301) 415-1677, to request (1) a digital ID certificate, which allows the participant (or its counsel or representative) to digitally sign documents and access the E-Submittal server for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a request or petition for hearing (even in instances in which the participant, or its counsel or representative, already holds an

NRC-issued digital ID certificate). Based upon this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/apply-certificates.html>. System requirements for accessing the E-Submittal server are detailed in NRC's "Guidance for Electronic Submission," which is available on the agency's public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. Participants may attempt to use other software not listed on the web site, but should note that the NRC's E-Filing system does not support unlisted software, and the NRC Meta System Help Desk will not be able to offer assistance in using unlisted software.

If a participant is electronically submitting a document to the NRC in accordance with the E-Filing rule, the participant must file the document using the NRC's online, web-based submission form. In order to serve documents through EIE, users will be required to install a web browser plug-in from the NRC web site. Further information on the web-based submission form, including the installation of the Web browser plug-in, is available on the NRC's public web site at <http://www.nrc.gov/site-help/e-submittals.html>.

Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then submit a request for hearing or petition for leave to intervene. Submissions should be in Portable Document Format (PDF) in accordance with NRC guidance available on the NRC public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the documents are submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59 p.m.

Eastern Time on the due date. Upon receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an e-mail notice confirming receipt of the document. The E-Filing system also distributes an e-mail notice that provides access to the document to the NRC Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the documents on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before a hearing request/petition to intervene is filed so that they can obtain access to the document via the E-Filing system.

A person filing electronically using the agency's adjudicatory E-Filing system may seek assistance by contacting the NRC Meta System Help Desk through the "Contact Us" link located on the NRC web site at <http://www.nrc.gov/site-help/e-submittals.html>, by e-mail at [MSHD.Resource@nrc.gov](mailto:MSHD.Resource@nrc.gov), or by a toll-free call at (866) 672-7640. The NRC Meta System Help Desk is available between 8 a.m. and 8 p.m., Eastern Time, Monday through Friday, excluding government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) first class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a

document in this manner are responsible for serving the document on all other participants. Filing is considered complete by first-class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service upon depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists. Documents submitted in adjudicatory proceedings will appear in NRC's electronic hearing docket, which is available to the public at [http://ehd.nrc.gov/EHD\\_Proceeding/home.asp](http://ehd.nrc.gov/EHD_Proceeding/home.asp), unless excluded pursuant to an order of the Commission, or the presiding officer. Participants are requested not to include personal privacy information, such as social security numbers, home addresses, or home phone numbers in their filings, unless an NRC regulation or other law requires submission of such information. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission. If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his interest is adversely affected by this Order and shall address the criteria set forth in 10 CFR 2.309(d).

If a hearing is requested by a licensee or a person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearings. In the absence of any request for hearing, or written approval of an extension of time in which to request a hearing, the provisions specified in Section IV above shall be final 20 days from the date this Order is published in the Federal Register without further order or proceedings. If an extension of time for requesting a hearing has been approved, the provisions specified in Section IV shall be final when the extension expires if a hearing request has not been received. If payment has

not been made by that time, the matter may be referred to the Attorney General, for collection.

In the event the Licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:

- (a) whether the Licensee was in violation of the Commission's requirements as set forth in the Notice referenced in Section II above, and
- (b) whether, on the basis of such violation, this Order should be sustained.

Dated at Rockville, Maryland, this 15<sup>th</sup> day of June 2010

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

Roy P. Zimmerman, Director  
Office of Enforcement

APPENDIX TO THE ORDER IMPOSING CIVIL MONETARY PENALTY ON  
BABCOCK & WILCOX NUCLEAR OPERATIONS GROUP (EA-08-204)

On February 23, 2010, a Notice of Violation and Proposed Imposition of Civil Penalty (Notice) was issued for a violation of NRC requirements involving the licensee's failure to provide adequate instructions to neutralize acid spills. The violation was identified following an event on April 28, 2008, in which a process operator took inappropriate actions to neutralize a spill of hydrofluoric acid (HF) and sustained an ocular exposure that required medical attention. Babcock & Wilcox Nuclear Operations Group (B&W) responded to the Notice on March 31, 2010. The Licensee denied its assigned severity level and protested the civil penalty in whole.

The NRC's evaluation and conclusion regarding the Licensee's request to reassess the severity level of the violation and to mitigate, in whole or in part, the civil penalty are as follows:

A. Restatement of Violation as provided in the Notice (February 23, 2010)

Safety Condition No. S-1 of Special Nuclear Material License No. 42 authorizes the use of nuclear material in accordance with Chapters 1-11 of the license application, submitted on October 24, 2006, and supplements thereto.

Chapter 6, "Chemical Safety Process", Section 6.1.2, "Procedures", of the license application states, in part, that the program shall be implemented as described in Chapter 11. Procedures will be implemented that establish requirements to minimize and control chemical safety risk resulting in: (a) radiation risk produced by licensed material; (b) chemical risk produced by licensed material; and (c) plant conditions that may have affect the safety of licensed material and thus present a radiation risk to workers, the public or the environment.

Chapter 11, "Management Measures", Section 11.4, "Procedures", of the license application states, in part, that activities at the Nuclear Operations Group Site involving licensed material shall be conducted in accordance with written and approved procedures.

Contrary to the above, Operations Procedure OP-0061167, "Spill and Leak Handling Emergency Procedure", failed to include instructions regarding how to neutralize acid spills. As a result, on April 28, 2008, a process operator took inappropriate actions to neutralize the spill by adding Sodium Hydroxide (NaOH), a strong base, which reacted violently with liquid hydrogen fluoride (HF) acid and which could have led to irreversible or other serious, long-lasting health effects to the process operator.

B. Licensee's Response to Violation and NRC's Evaluation

In its letter dated March 31, 2010, B&W denied the severity level of the violation and, protested the civil penalty in whole. B&W stated that their denial of the severity level of the violation is based on (1) a result of a review of the facts surrounding the incident as presented by their root cause analysis team; (2) a concern over the precedent set by

concurring with the assessment of a procedure inadequacy leading to a violation of this severity (i.e. severity level III); and, (3) a continued concern over the interpretation of this incident as one that could have led to irreversible or other serious, long-lasting health effects to the operator. The following are the licensee's arguments in detail and the NRC's response to each argument:

#### ARGUMENT (1)

##### **Licensee Argument:**

B&W stated that, based on a review of the root cause investigation, the NRC contention that OP-0061167 failed to include instructions regarding how to neutralize acid spills is inaccurate and that B&W did have a spill program in place. The procedure had the following elements: it identified HF as a hazardous substance; it provided some guidance for acid spills; it required operators to notify the supervisor, Industrial Health & Safety and Radiation Protection in the event of a spill; it required spills to be controlled safely with appropriate personal protective equipment, and it provided respiratory protection requirements specifically for HF. B&W also stated that the active error of the event was the process operator's selection of and use of sodium hydroxide (caustic soda) instead of sodium carbonate (soda ash) on the spill due to issues with the drums containing these chemicals. Therefore, B&W determined that specific instructions in the procedure on how to neutralize HF would not have prevented the selection of the wrong chemical in this situation. Several factors led to the selection of the wrong chemical: a) the drums of chemicals were not easily distinguishable (i.e. both black in color); b) drums were not distinguishable due to label orientation and fading of the labels; and c) storage location of the chemicals had changed and the soda ash drum had been moved from its normal location. B&W stated that the operator knew by his training and previous experience with neutralizing HF spills that he needed soda ash to neutralize the HF spill.

##### **NRC Response:**

The NRC thoroughly reviewed Operations Procedure OP-0061167, "Spill and Leak Handling Emergency Procedure." In addition, the NRC acknowledged the comprehensive and detailed root cause investigation completed by B&W and agrees with many of its findings. For instance, the NRC concluded that lack of human factor engineering regarding drum labeling, location, and identification was a factor in the operator exposure to HF. The NRC also agreed with B&W that the procedure contained some guidance for neutralizing acid spills. Section N, "Handling Leaks and Spills in the Chemical Preparation and Outside Areas," line 14.7 provides neutralization instructions relevant to the April 28, 2008 spill event and states "use vacuum cleaners, mops, water and neutralizers to clean up non radioactive spills." However, the NRC determined that the procedure failed to include adequate instructions regarding the proper method to neutralize a HF spill. As an example, the procedure should have provided guidance to ensure the proper neutralizing agent was utilized in response to a spill of HF. In addition, the procedure should have specified the appropriate quantity of soda ash

necessary to contain a HF spill of a given size and the appropriate steps to ensure complete neutralization of the spill. In part as a result of inadequate procedural instructions, on April 28, 2008, the operator did not wear proper personal protective equipment (i.e. failure to use a face shield or respiratory protection), added sodium hydroxide (and would have added sodium carbonate if correctly selected) to the HF spill in bulk which caused the mixture to react violently and flash in his face, and did not test the spill for PH before adding what he believed to be sodium carbonate. The NRC also concluded that the procedure failed to contain adequate human factor instructions to reduce the risk of improper operator actions and ensure that operators understood the necessary steps and safety precautions required to neutralize a HF acid spill.

## ARGUMENT (2)

### **Licensee Argument:**

B&W stated that a review of NRC violations identified at their Lynchburg, Virginia facility from 2004 through 2008 showed a total of sixteen procedure violations. B&W stated that thirteen of these violations were categorized at Severity Level IV and the remaining three violations were classified as Non-Cited violations. B&W further stated that it appeared the NRC was deviating from historical interpretation of the enforcement policy involving procedural compliance by a licensee.

### **NRC Response:**

The Enforcement Policy describes the various ways the NRC can disposition violations. The manner in which a violation is dispositioned is intended to reflect the seriousness of the violation and the circumstances involved. The NRC reviews each case being considered for enforcement action on its own merits to ensure that the severity of a violation is characterized at the level best suited to the significance of the particular violation. The NRC assesses the significance of a violation by considering, among other things, actual and potential consequences.

Supplements I through VIII to the Enforcement Policy provide examples and serve as guidance in determining the appropriate severity level for violations in each of eight activity areas. However, the examples are neither exhaustive nor controlling.

The NRC recognizes that the supplements do not contain an example that exactly reflects the circumstances associated with this violation. Therefore, the NRC reviewed a number of examples in different supplements before characterizing the violation at the severity level best suited to the circumstances.

The NRC considered characterizing the violation at Severity Level II because Supplement VI.B.5 states:

- Supplement VI.B.5 (SLII) - the potential for a significant injury or loss of life due to a loss of control over licensed or certified activities, including chemical process that are integral to the licensed or certified activity, whether radioactive material is released or not.

However, the NRC concluded that because the potential consequences of the exposure were minimized as a result of the prompt and effective response of the onsite emergency and offsite medical teams, the violation did not warrant characterization at Severity Level II.

The NRC considered characterizing the violation at Severity Level IV because Supplement VI.D.2 states:

- Supplement VI.D.2 (SLIV) – other violations that have more than minor or environmental significance.

However, the NRC considered the injury to the operator significant because the operator sustained an ocular exposure that required medical attention. Therefore, the NRC concluded that the violation did not warrant characterization at Severity Level IV. In addition, although not used in determining the severity level, the NRC noted that this event was an OSHA recordable event and was listed as a lost work day incident.

The NRC considered characterizing the violation at Severity Level III because Supplement VI.C.4 states:

- Supplement VI.C.4 (SLIII) - a substantial potential for exposures, radiation levels, contamination levels, or releases, including releases of toxic material caused by a failure to comply with NRC regulations, from licensed or certified activities in excess of regulatory limits.

The NRC considered that, although this example is not an exact reflection of the circumstances associated with the event, the violation resulted in a substantial potential for an exposure to toxic material caused by a failure to comply with regulatory requirements. Therefore, the NRC concluded that the violation warranted characterization at Severity Level III.

With regard to the assessment of a civil penalty, the NRC determined that although a civil penalty is considered for any SLIII violation, a civil penalty would not normally be proposed for this violation because credit was warranted for your prompt and effective corrective actions in response to the event and the procedural violation. However, your facility had been the subject of escalated enforcement in the prior two years and, therefore further evaluation to determine if a civil penalty was warranted was required in accordance with the civil penalty assessment process described in the Enforcement Policy. Because this issue was identified as a result of an event, credit was not warranted for identification and a civil penalty of \$32,500 was proposed. Further, the NRC determined that there was not an adequate basis to warrant mitigating the civil penalty.

With regard to the perceived appearance by the NRC of deviating from historical interpretation of the enforcement policy involving procedural non-compliance by a licensee, the NRC reviewed enforcement actions issued to licensees in the past several years and identified a number of cases where escalated enforcement (a Severity Level II or III NOV- with or without a civil penalty) was issued. The NRC agrees that most enforcement actions issued for procedural non-compliance were characterized at Severity Level IV. However, when identified procedural violations were associated with a significant deviation from expected behaviors (e.g. willfulness, deterioration of a safety system or control, personnel exposure to an unintended area of the body), the non-compliance was escalated to Severity Level III or higher. In the circumstances associated with this procedural violation, the NRC considered the actual exposure of an operator to hazardous material to be significant and determined the severity level classification to be Severity Level III. As stated earlier, the NRC concluded that, because of the prompt and effective response of onsite emergency and offsite medical teams, escalation of the severity level to Severity level II was not warranted. The NRC concluded that the staff did not deviate from historical interpretation when assessing the sanction for this procedural violation nor did the staff deviate from the Commission's guidance in the Enforcement Policy.

### ARGUMENT (3)

#### **Licensee Argument:**

B&W stated that it agreed with the NRC that 10 CFR 70.61(c)(4) is not applicable to the incident since the chemical was not a "hazardous chemical produced from licensed material" but believed it inappropriate for the NRC to state that "the event could have led to irreversible or other serious long lasting health effects," which is language taken from 10 CFR 70.61(c)(4). B&W stated that Part 70.61 either applies in its entirety or does not apply. B&W further stated that their prompt emergency response actions (onsite medical care provided by co-workers and the B&W emergency response team) and programmatic mitigators (eye wash stations, personal protective equipment, operating procedures, and hazardous chemical training) ensure a worker exposed to hazardous chemicals will not be seriously injured and should be considered available and reliable by the NRC in assessing the safety significance of the event. B&W noted that physicians for the employee and contracted by the NRC concluded that the prompt emergency response and programmatic mitigators prevented serious eye injury to the employee. Finally, B&W stated that there is no evidence that the employee was exposed to the full concentration of HF and that sodium hydroxide (caustic soda) is equally likely to be the chemical that entered the eye. Both situations would result in the potential for a less severe eye injury.

#### **NRC Response:**

The NRC stated in its letter dated February 23, 2010 that the cited violation of 10 CFR 70.61 issued October 20, 2008, was retracted because the HF to which the operator was exposed was not a "hazardous chemical produced from

licensed material.” Although the event did not involve comingling of a hazardous chemical with licensed material, this performance issue remained under NRC’s regulatory purview in accordance with the Memorandum of Understanding between the Occupational Safety and Health Administration and the NRC (53 FR 43950).

The NRC maintains that the severity level was properly assessed. In assessing the severity level of the procedural violation, NRC was not limited to the circumstances of the actual resulting event, which in this case involved HF and not a “hazardous chemical produced from licensed material.” Rather, NRC considered the potential consequences of the violation, which could have been associated with a “hazardous chemical produced from licensed material” or could have impacted facility conditions affecting the safety of licensed material had the event involved the contents of other drums or occurred at other process locations.

B&W stated that since the NRC decided not to cite a violation against 10 CFR 70.61(c) (4), the NRC inappropriately applied the language in that regulation to this incident. NRC decided not to cite against the regulation, because the HF in the event was not a “hazardous chemical produced from licensed material.” The language in that regulation, however, describes potential event consequences which could occur in instances not involving a “hazardous chemical produced from licensed material.” The NRC therefore used the language of the regulation - “the event could have led to irreversible or other serious long lasting health effects,” - to describe the potential circumstances of the violation. The NRC is not precluded from using a specific characterization of consequences merely because that characterization appears in the text of a regulation to which it is not citing against.

The language appropriately described the potential circumstances because the violation associated with the April 28, 2008 event could have led to irreversible or other serious long lasting health effects. NRC used 49% hydrofluoric acid as a worst case scenario due to the unknowns in the source term. The source term from a routine spill of hydrofluoric acid would be a function of the evaporation rate of the solution at the ambient conditions on the area. In this case, the operator added one of the strongest possible bases, at an unacceptable rate, with no standard procedure to guide him. The heat of neutralization was high enough to cause an explosion, and the operator was struck with a combination of partially neutralized reactants.

#### C. Conclusion

For the above reasons, the NRC concludes that the violation occurred as stated in the Notice. Further, the NRC concluded that B&W did not provide an adequate basis for mitigation of the proposed civil penalty. Consequently, the proposed civil penalty in the amount of \$32,500 should be imposed.