



# EcoCanal 2010 Notification Drill After Action Report and Improvement Plan

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#### **Executive Summary**

#### **Synopsis**

The NRT-ACP Memorandum of Agreement (MOA), which provides the basis for the NRT-ACP relationship, stresses the importance of the Panama Canal in international trade and commerce, and both Panama's and the United States' interest in ensuring safe unencumbered operation in the Canal area. As such, the Parties have continued to develop and refine procedures that facilitate timely and appropriate supplemental assistance in the event of a significant pollution incident within the Canal. As part of these ongoing efforts, mandated in the MOA, annual exercises are held with the NRT and ACP to ensure continuity of communications, planning, and improving emergency response operations in the Canal. EcoCanal '10 was illustrative of these most recent efforts.

The EcoCanal '10 Exercise, which occurred on February 4, 2010, comprised a one-day notification drill planned by representatives of both the NRT and ACP. The drill simulated a major pollution incident that occurred within the ACP Contingency Plan area of operations (AOR) and had the potential to impact adjacent jurisdictions. This exercise focused on the assembly of the ACP Spill Management Team in an Incident Command System (ICS) structure and their use of the NRT-ACP Incident Response Guide (IRG) to perform initial notification to the National Response Center (NRC) and follow-up conference calls with the NRT.

In evaluating these activities and critical tasks, a Joint Evaluation Team focused on assessing the response organizations' capabilities, functions, plans, and agreements.

#### Scenario

It was a sunny, breezy morning on February 4, 2010 at Gatún Lake, Republic of Panama. Relative humidity was approximately 60%. The wind was flowing from the north-northwest at approximately 15 knots.

The Motor/Vessel (M/V) Bonanza was a full containership going southbound, schedule S12T, with a length of 964 ft, a beam of 106 ft and a draft of 32/03 Tropical Freshwater Forward (TFWFWD) and Tropical Freshwater Aft (TFWAFT). Some containers on board were carrying dangerous materials of International Maritime Organisation (IMO) classes 2.1, 2.2, 3, 4.1, 4.2, 4.3, 5.1, 6.1, 8, and 9.

The M/V Thunderbird was a dry-bulk carrier going northbound, schedule N15, with a length of 738 ft, a beam 105 ft, and a draft 39/05 TFW. She carried direct reduced iron (DRI) in bulk.

At 08:00 hours, the M/V Bonanza was passing through Bohio Reach (approximately 9° 10' 50" N, 79° 52' 00" W) when a fire evolved in her engine room. There was a general electrical failure on board the ship, and her crew lost control over the navigational equipment. The crew was unable to stop the M/V Bonanza as it approached the M/V Thunderbird.

September 30, 2010 Page 3 of 20 At approximately 08:10, the M/V Bonanza collided with M/V Thunderbird, damaging two of her cargo holds carrying DRI. Due to the collision, five containers from the M/V Bonanza fell and sank to the bottom of the waterway. It was believed that the containers carried pesticides, presumably, copper sulfate (UN 9109), methyl parathion (UN 2783), and Paraquat (UN 2781).

At 08:20, M/V Thunderbird reported that she became grounded and at least two freight containers were seen submerged in the water close to her.

At 08:30, tugboat Colon, which was sent to assist, reported an oil spill apparently coming from the grounded vessel. The Thunderbird's chief mate confirmed a leak from a fuel tank. The product was Intermediate Fuel Oil (IFO) 380 and the spill was at a rate of approximately 500 gallons per minute. The damaged tank had a capacity of 600 tons and the contents were being pumped to other tanks.

# Outcome and Areas for Improvement

Evaluation of agency actions identified several key strengths:

- Players conducted themselves in a professional manner throughout the exercise. Individuals properly identified themselves, made clear statements and requests, and seized the opportunity to garner a greater understanding about the resources and capabilities that the ACP and NRT can provide when responding to an incident.
- The NRT-ACP IRG was helpful in delineating expectations. Players
  referenced the IRG, which provided insight to the objectives of each step
  of the notification procedures. This allowed participants to quickly
  convey their needs and capabilities to address the unfolding scenario.
  Consequently, this would have facilitated a quicker mobilization of
  resources.
- ACP personnel demonstrated a strong understanding of the ICS. The
  ACP was able to efficiently set up a Spill Management Team under an
  ICS structure. This allowed the Incident Commander (IC) to acquire
  requested information outlined in the NRT-ACP IRG, allowing for a
  comprehensive incident assessment and specific requests for the NRT.
  This is indicative of the quality training that ACP personnel have
  received.
- NRT Member Agencies were actively engaged throughout the coordination process and were well versed in the capabilities that their respective agencies could provide. As a result, the NRT verified that it can offer a comprehensive response strategy.

Several areas for improvement were also recognized. Among the most significant were:

- Ensuring that POCs, contact information, and proper methods of communication are up-to-date to facilitate timely resource requests.
- Providing NRT and ACP representatives essential documents in both

Spanish and English.

- Evaluating forms found in the NRT-ACP IRG to verify that they contain necessary information to promote situational awareness.
- Continuing to practice these types of exercises and to elevate to the next stages of leveraging resources and preparing them for deployment.

The full results of EcoCanal '10 are discussed in the Issues and Corrective Actions Identification section of this report. In addition, recommended changes, observations, and lessons learned are included as part of this After Action Report (AAR).

The suggested improvement actions offered in this report are recommendations. In some cases, the ACP or NRT may determine that particular tasks and activities are outside of their scope and capability at the present time or in the future. Similarly, alternative solutions may be identified that are more effective and efficient.

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#### **EcoCanal '10 Overview**

#### Exercise Concept and Design

The relationship that has defined the NRT-ACP connection over the last ten years has been one filled with learning, commitment, and understanding. Since the ACP began governance of the Canal a little over a decade ago, it has enthusiastically embraced the assistance NRT Member Agencies have offered. At the same time, ACP has provided U.S. agencies a unique opportunity to better understand how they can best cultivate preparedness and support responses to hazardous substance releases, both domestically and abroad.

The conclusion of EcoCanal '10 marks the eighth exercise held between the NRT and ACP. Over this span, the ACP has gradually incorporated the tenets of ICS and has successfully augmented its capacity to respond to oil spills and chemical releases.

Stemming from EcoCanal '09 Command Post Exercise (CPX), which involved the first successful establishment of a Unified Command (UC) by Panamanian agencies, the EcoCanal '10 Notification Drill sought to address lessons learned and areas for improvement identified the previous year.

Beginning in September 2009, NRT and ACP representatives began planning for the 2010 notification drill. The scenario, objectives, and foundation for EcoCanal '10 were conceived and developed during conference calls between the parties. The exercise was structured with the intent of continuing to strengthen the relationship between the ACP and NRT, as well as continuing to improve respective parties' abilities to respond to hazardous substance releases.

Prior to the exercise, the ACP received training by NRT representatives, in which they reviewed the ICS Planning "P" and the proper and effective use of the NRT-ACP IRG.

The notification drill occurred over one day in which the ACP made initial notifications to the NRC, which allowed proper coordination for the NRT to support the ACP during its response operations. Following the drill, both ACP and NRT participants convened to discuss their observations. Additionally, evaluators from both organizations held a subsequent hotwash to discuss strengths and areas of improvement identified during the drill.

# General Description

The exercise was designed to provide participants with an opportunity to assess current capabilities to perform the critical tasks required to respond to a major oil spill and chemical release in the Canal Area and adjacent jurisdictions. By assessing those capabilities, participants identified strengths, weaknesses, and future training needs.

During the exercise, the ACP was able to quickly gather information on the scope of the emergency and identify critical resources necessary to provide a comprehensive response. This information was then conveyed to the NRT, who was able to tap into its Member Agencies' assets to compose an Incident Management Assist Team (IMAT) that fully addressed the ACP's needs in helping them mitigate potential harmful effects on the environment, commerce, and the public.

While the NRT and ACP established successful coordination in response to the scenario presented, several areas were identified that would improve overall response effectiveness by both the NRT and ACP. The following were identified as critical steps in enhancing NRT-ACP coordination and communication: enhancing depth of personnel trained in executing Incident Specific Agreements (ISAs); reviewing steps necessary to provide personnel and equipment into and out of Panama; and revising the IRG to ensure that proper positions, contact information, and expectations are properly articulated.

# Locations of Operations

The notification drill was conducted through teleconference, with ACP participants staged at the ACP Emergency Operations Center (EOC) in Corozal West, Building 741 in Panama City, Panama and NRT representatives participating at various locations around the U.S., telephonically.

# Participating Agencies

The ACP, NRT Member Agencies, and representatives from the U.S. Embassy to Panama participated in the exercise. Participating agencies were as follows:

Panamanian Agencies

• ACP, Panamá Canal Authority

U.S. Agencies

- NRT
  - Environmental Protection Agency (EPA)
  - Coast Guard (USCG)
  - Department of Commerce/National Oceanic and Atmospheric Administration (DOC/NOAA)
  - Navy, Supervisor of Salvage (SUPSALV)
  - Department of State (DOS)
  - Federal Emergency Management Agency (FEMA)
  - Department of the Interior (DOI)
  - Department of Justice (DOJ)
  - Department of Agriculture (USDA)
  - Department of Transportation (DOT)
  - Department of Labor/Occupational Safety and Health Administration (DOL/OSHA)
  - General Services Administration (GSA)
  - *Health and Human Services (HHS)*
  - Nuclear Regulatory Commission
- USCG Gulf Strike Team (GST)
- EPA Environmental Response Team (ERT)
- EPA Region 6

- NRC
- Embassy of the United States, Panama

#### **Training**

Prior to exercise play, the ACP worked with NOAA and USCG representatives to provide participants with ICS refresher training and review on the use of the NRT-ACP IRG, including how to use new forms and procedures stemming from lessons learned in EcoCanal '09.

#### **Exercise Evaluation**

# Evaluation Criteria

The exercise was designed to provide participants with an opportunity to assess current contingency response plans to perform the critical tasks required to respond to an oil spill and chemical release in the Canal Area and surrounding jurisdictions. By assessing those capabilities, participants identified strengths, weaknesses, and future training needs.

Evaluators were present at the exercise locations to observe and record exercise events, including player actions. Members of the evaluation team, from both NRT and ACP, evaluated based on specific criteria established for each of the five specific objectives (identified below). Following completion of the facilitated exercise play, a debrief was conducted to capture observations and opinions from players and identify issues and gaps in the response. In addition, ACP participants were provided with exercise evaluation forms to record their observations of the exercise and NRT participants were solicited to provide their insights. After the debrief, evaluators held a meeting to discuss and collaborate on their observations and recommendations. The results of the debrief discussion and evaluation forms, which focused on the strengths and areas for improvement resulting from this exercise, are documented in the Issues and Corrective Actions section of this report.

In keeping with the no-fault nature of this exercise, the evaluation embodied in this report examines the plans, procedures, and response systems utilized in this exercise. As an evaluated practice, agency performances were observed and documented in order to make recommendations for future improvements. Evaluator observations focus primarily on overall agency actions and the interactions between agencies, rather than on individual players.

The lessons learned from the exercise will improve coordination between the ACP and NRT, in addition to all parties' preparedness and planning efforts. Further, they will lead to future discussion and training relevant to recognized capabilities and identification of issues.

#### **Objectives**

- 1. Validate procedures outlined in the *NRT ACP IRG Section 1.0: Notification Procedures*.
  - Timeliness of notifications and calls to the NRC, U.S. Embassy, and the NRT.
- 2. Assess the ability of the response organization to convey relevant information outlined in the *NRT-ACP IRG Appendix A: Incident Notification Form*.
  - Are there any contact numbers to be updated?
  - Is all of the necessary information contained within *Appendix A: Incident Notification Form*?
- 3. Assess the ACP's ability to convey the nature of assistance and needs to

the NRT through a comprehensive incident assessment.

- Assess the ability of the response organization to convey appropriate information outlined in the *NRT-ACP IRG Appendix B: ACP Briefing Agenda* during the NRT-ACP teleconference.
  - Does the form need any modification?
- 4. Assess the NRT's ability to determine potential and appropriate support to the ACP.
- 5. Assess NRT Member Agencies' ability to facilitate specific ACP resource requests identified during the NRT-ACP teleconference.

#### **Issues and Corrective Actions**

#### Introduction

The EcoCanal '10 exercise focused on communications and team building. Evaluators were requested to document the key actions and issues identified during the exercise.

As an evaluated practice, agency performances were observed and documented in order to make recommendations for future improvements. Evaluator observations focus primarily on overall agency actions and the interactions between agencies, rather than on individual players.

## Objective: 1

Validate procedures outlined in the NRT – ACP IRG Section 1.0: Notification Procedures for timeliness of notifications and calls to:

- o NRC;
- o U.S. Embassy; and
- o NRT.

o NRT.	
Title of Lesson Learned	Procedures provided to the NRC by the NRT should explicitly detail the preferred order of contact.
Observation	<ul> <li>The ACP placed the initial notification call in a timely manner (within the first hour).</li> <li>The NRC watch-stander, who received the incoming notification call, was very professional and reassuring to the ACP representative.</li> <li>ACP's notification call to the U.S. Embassy USCG Liaison Officer was problematic, as the first and second calls (to the primary and secondary contacts) went to voicemail. The ACP decided to leave a voicemail instead of continuing to try additional contact numbers.</li> <li>Notification by the NRC to the NRT Chair and Vice-Chair occurred within 10 minutes after receiving initial report from ACP.</li> <li>The "Activation Call" between the NRC and NRT Executive Director took 36 minutes to occur.</li> <li>"Conference Call A" was convened by the NRT Executive Director within two hours of incident notification.</li> <li>"Conference Call B" was convened by the NRT within three hours of incident notification.</li> <li>NRC's training and practice on receiving notifications from the ACP was proven effective, as its personnel were able to quickly reach out to the appropriate individuals to efficiently activate the NRT.</li> </ul>
Lesson Learned	The U.S. Embassy USCG Liaison Officer needs to be contacted directly by an ACP representative in order to pass on timely notification. Calling directly to cell phone with a follow-up email sent to his Blackberry is the preferred order of contact. The IRG should be updated to reflect this change of protocol.

	• It would have been beneficial to have included the NRT-ACP Subcommittee Chair for "Conference Call A," as this individual is very familiar with ACP protocols and response capabilities.
Recommendations	<ul> <li>Update IRG to reflect U.S. Embassy USCG Liaison Officer preferred method of notification.</li> <li>Add NRT-ACP Subcommittee Chair to notification list of "Conference Call A" delineated in NRT-ACP IRG Section 1.0: Notification Procedures.</li> <li>Update NRT-ACP IRG Section 1.0: Notification Procedures to include U.S. Embassy USCG Liaison Officer on the fax/email notification list for ACP incident notifications.</li> <li>Once the IRG is finalized, it should be translated into Spanish.</li> </ul>

#### Objective: 2

Assess the ability of the response organization to convey relevant information outlined in the NRT-ACP IRG Appendix A: Incident Notification Form.

- o Are there any contact numbers to be updated?
- Is all of the necessary information contained within Appendix A: Incident Notification Form?

Notification	Form?
Title of Lesson Learned	NRT-ACP IRG should be periodically reviewed to ensure POCs and forms are up-to-date.
Observation	<ul> <li>There were several minor fields omitted on <i>Appendix A: Incident Notification Form</i> that did not address questions asked by the NRC.</li> <li>There were also several phone numbers identified on <i>Appendix C: ACP Points of Contact</i> that need to be updated.</li> <li><i>Appendix J: List of Acronyms</i> does not contain Federal On-Scene Coordinator (FOSC).</li> </ul>
Lesson Learned	<ul> <li>Appendix A: Incident Notification Form should contain additional fields to cover questions from the NRC.</li> <li>Appendix C: ACP Points of Contact and other phone lists need to be periodically checked and updated for accuracy.</li> <li>To help ACP clarify terms used by the NRT, include a comprehensive list of English acronyms within the IRG.</li> </ul>
Recommendation	<ul> <li>Review IRG annually to verify POCs and contact information.</li> <li>Add FOSC to <i>Appendix J: List of Acronyms</i>.</li> <li>Add additional fields to <i>Appendix A: Incident Notification Form</i> to preemptively address questions that will be solicited by the NRC (e.g, were there any injuries and what actions have already been taken in response to the incident?).</li> </ul>

### Objective: 3 Assess the ACP's ability to convey the nature of assistance and needs to the NRT through a comprehensive incident assessment. Assess the ability of the response organization to convey appropriate information outlined in the NRT-ACP IRG Appendix B: ACP Briefing Agenda during the NRT-ACP teleconference. Does the form need any modification? Title of Lesson NRT-ACP IRG Appendix B: ACP Briefing Agenda was instrumental in Learned preparation for conference calls between the NRT and ACP. • The ACP IC conferred with the Spill Management Team to address Observation items outlined in Appendix B: ACP Briefing Agenda. Subsequently, the IC was able to effectively take information from *Appendix A: Incident Notification Form* and use that as a starting point for information required for Appendix B: ACP Briefing Agenda. • The IC was able to use Appendix B: ACP Briefing Agenda as a mechanism to gather facts for the situational awareness of his organization. • The IC took responsibility for briefing the NRT during Conference and was fully prepared for both discussions, by providing a

Objective: 4	
Assess the NRT's a	ability to determine potential and appropriate support to the ACP.
Title of Lesson Learned	Participating in regular exercise opportunities is critical in understanding NRT Member Agency capabilities and expectations.
Observation	<ul> <li>The NRT determined that a twelve-person IMAT should be deployed to Panama.</li> <li>There was some confusion on "Conference Call A" concerning which agency would provide the pollution capable dive team.</li> <li>As noted earlier:</li> <li>There were several phone numbers identified on Appendix C: ACP Points of Contact that need to be updated.</li> <li>There were several missing fields in Appendix A: Incident Notification Form that did not cover questions asked by the NRC.</li> <li>Appendix J: List of Acronyms does not contain FOSC.</li> <li>The ACP made three specific requests from the NRT: a four-person IMAT for assistance with IC, Planning, Operations, and Logistics; a salvage dive team capable of diving in polluted waters; and technical support on dealing with DRI and also the pesticides.</li> </ul>
Lesson Learned	<ul> <li>The NRT and ACP need to discuss resource allocation prior to mobilization to ensure requests are being met accurately.</li> <li>Parties should practice filling resource requests regularly to help avoid confusion amongst NRT Member Agencies regarding the roles of individual agencies and the assets they provide.</li> <li>As noted earlier:</li> <li>Appendix C: ACP Points of Contact and other phone lists need to be periodically checked and updated for accuracy.</li> <li>Appendix A: Incident Notification Form should have contained additional fields to cover questions from the NRC.</li> <li>The IRG should include a comprehensive list of English acronyms to help ACP clarify terms used by the NRT.</li> </ul>
Recommendation	<ul> <li>During future exercise opportunities, the NRT should assess current commitments and capabilities so that during an actual incident it can provide the ACP defined expectations.</li> <li>The NRT should consider developing a list of NRT Member Agencies' emergency response teams and assets, so that resources can be quickly identified for mobilization. This would help reduce confusion as to which agency should provide which capability.</li> <li>The NRT should review the IRG to remove any duplicative information.</li> </ul>

# Objective: 5

Assess NRT Member Agencies' ability to facilitate specific ACP resource requests identified during the NRT-ACP teleconference.

Title of Lesson Learned	Regular training activities help ensure that both the NRT and ACP are well versed in understanding their roles and responsibilities.
Observation	<ul> <li>The NRT used this drill as a notification exercise only. While there was discussion on specific resource requests by the ACP, no follow-up actions were taken.</li> <li>The ACP reviewed the documentation for both <i>Appendix H: Incident Specific Agreement</i> and <i>Appendix I: EXAMPLE Incident Specific Agreement</i>. Feedback was positive on having both a blank and filled-in example agreement.</li> </ul>
Lesson Learned	<ul> <li>To fully assess the NRT's ability to facilitate resource requests, future training and exercises should evaluate NRT's ability to identify resources and personnel to respond to ACP needs.</li> <li>The NRT should train on steps necessary to send people and equipment to Panama.</li> <li>The NRT needs to test its relationships with the U.S. Embassy in Panama and DOS for both information sharing and also to facilitate the movement of personnel and equipment into and out of Panama.</li> <li>During the notification drill, it became apparent that it would be beneficial if there was greater depth of ACP personnel who were familiar in drafting ISAs.</li> </ul>
Recommendation	<ul> <li>The NRT should have an "in-house" drill to assess its ability to identify resources and personnel in response to ACP needs. To take this next step, it could be easy to do a follow-up from the scenario and requests made from the EcoCanal '10 notification drill.</li> <li>The NRT should make concerted efforts to keep the U.S. Embassy in Panama and DOS apprised of Member Agencies' procedures for mobilizing personnel and equipment internationally.</li> <li>The ACP should work to expand depth of personnel who can execute ISAs.</li> </ul>

# Appendix A: Improvement Plan Matrix

# Improvement Plan Matrix

The Improvement Plan Matrix is a tool to track assigned improvement actions and their ongoing status.

Issue	Recommendation	Responsible Party/Action Office	Date Assigned & Completion Date	POCs
NRT-ACP Communication and Coordination	<ul> <li>Update NRT ACP IRG Section 1.0: Notification Procedures to:         <ul> <li>Accurately reflect preferred methods of notification;</li> <li>Include NRT-ACP Subcommittee Chair on notification list of "Conference Call A;" and</li> </ul> </li> <li>Include U.S. Embassy USCG Liaison Officer on the NRC notification list when it receives incident reports from ACP.</li> </ul>	NRT-ACP Subcommittee		
	Add additional fields to the NRT-ACP IRG Appendix A: Incident Notification Form, including:  • Did any injuries occur at the incident?  • What remedial actions have already been taken in response to the incident?	NRT-ACP Subcommittee		
	Translate NRT-ACP IRG into Spanish.	NRT-ACP Subcommittee		
	Provide ACP with DOT ERG in Spanish.	USCG		
	Review IRG annually to verify that POCs and contact information are up-to-date and that the Guide accurately reflects emerging issues and response capabilities.	NRT-ACP Subcommittee		
	Remove any duplicative information from the IRG	NRT-ACP		

		Subcommittee
	Add FOSC to Appendix J: List of Acronyms.	NRT-ACP Subcommittee
	Develop NRT Member Agencies' list of response assets.	NRT
NRT-ACP MOA	Review and train ACP, NRT Member Agencies, and the U.S. Embassy in Panama on procedures outlined in the NRT-ACP MOA and IRG.	ACP, NRT, DOS Panama
	The NRT keep the U.S. Embassy in Panama and DOS apprised of Member Agencies' procedures for mobilizing personnel and equipment internationally.	NRT
Training	NRT should conduct an "in-house" drill to assess its ability to identify resources and personnel in response to ACP needs.	NRT
	The ACP and NRT should expand depth of personnel who can fill out and execute ISAs.	ACP

## Appendix B EcoCanal '10 Notification Drill - ACP Agenda

Wednesday, February 3<sup>rd</sup>, 2010

Time	Event
0930 - 1030	Review Planning "P" Process
1030 - 1130	Use of NRT-ACP IRG Guide
1130 - 1200	Participant & Scenario Brief

Thursday, February 4<sup>th</sup>, 2010

Time	Event
0800	Check In
0830	Exercise Scenario / Complete ICS- 201 Form
0930	Initial notification to the NRC and U.S. Embassy
1000	Continue with scenario discussion
1130	Conference Call A convened
1200	LUNCH
1300	Continued discussion on next operation period needs / assistance required from NRT
1400	Conference call with Incident- Specific NRT
1430 - 1500	Exercise evaluation

# **Appendix C NRC Timeline of EcoCanal '10 Notification Drill**

## Thursday, February 4th

0934	NRC took the drill report # 930482 from Panama Canal Authority; drill was initiated.
0945	NRC left messages for NRT Chair, Vice-Chair, and LCDR Meridena Kauffman regarding the drill.
1010	NRC notified NRT Executive Director of drill and he established Conference Call A for 1130.
1013	NRC notified National Strike Force (NSF).
	NRC notified EPA Region 6.
1014	NRC notified GST.
1017	NRC left a message with ACP.
1116	ACP called NRC to confirm conference time.
	NOAA called NRC inquiring why they were not contacted.
1120	GST called NRC to confirm information passed earlier.
1130	Conference Call A was held.
1239	NRC sent email notification of 1400 drill conference call to NRT Members.
1249	NRC began calling NRT Members they were unable to reach via email.
1330	NRC completed the notification to all NRT Members.
1400	Conference Call B was held.