

EXERCISE THUNDERBIRD 3 - OUTLINE FACTS

Exercise Dates: January 28-29, 1998

Location: Lower Fraser Valley (PFRC in Langley)

Scenario: Volcanic Eruption of Mount Baker

Exercise Outline: To be distributed by Mid-July 1997

Exercise Design Team Meeting (Langley): September 10, 1997

Provincial Field Response Centre (PFRC) Training (Langley): December 8-12, 1997

Controller Training: January 27, 1998 (day before the exercise)

Note: The covering letter accompanying the Exercise Outline will include a call for confirmation of participating ministries, agencies, municipalities and regional districts.

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**Annex A
to Exercise
Instruction
THUNDER
BIRD 3**

**EXERCISE THUNDERBIRD 3
OUTLINE TIME SCHEDULE**

SERIAL	DAY	DATE	TIME	EVENT	REMARKS
1		27 Jan 98	0900	Controller Training (all PFRC/ministry/municipal/agency controllers, including Exercise Design Team Members)	Old Langley Court House, Room #1
2	1	28 Jan 98	0800	PFRC assigned staff/controllers/evaluators in place at the Old Langley Court House. Other exercise participants including assigned controllers in location at respective EOCs (ministry/municipal/agency) ready to commence exercise.	Control staff at all locations issue to all participants
			0815	Opening exercise Situation Report/Start-State issued (Control SITREP #1)	
			0815-0830	Read-in of SITREP #1	
			0830	Exercise Events start	
			1200	LUNCH	Control staff initiated/monitored at all locations
					Lunch on shift basis; available on ground floor on Day 1 and Day 2.

SERIAL	DAY	DATE	TIME	EVENT	REMARKS
2	1	28 Jan 98	1545 1545-1630	Exercise play suspended Debriefing of day's event Briefings for next day's play Any additional arrangements	Control staff At discretion of Section Chiefs/Managers and control/evaluation staff
3	2	29 Jan 98	0800 1400 1400-1445 1445	Exercise play resumes - Situation Report issued (Control SITREP #2) Exercise play ends (ENDEX) PFRC Section Chiefs debrief their respective staffs to capture items for the Hot Wash-up. Questionnaires to be completed and handed in. Hot Wash-up: all control/evaluation/PFRC Section Chiefs attend - aim is to capture comments/viewpoints/recommendations while still fresh in players' minds.	Control staff Control staff Ministry/municipal/agency controllers conduct own wash-ups in their respective locations immediately after ENDEX. Significant comments/observations, as well as completed questionnaires, should be passed to the Chief Controller at PEP within 10 days of ENDEX.

NOTES:

1. Questionnaires will be issued by controllers to all staff in the PFRC and participating EOCs/Response Cells.
2. A THUNDERBIRD 3 Post-Exercise Report (PXR) will be distributed to all participants as soon as possible following the exercise.
3. A controller debriefing involving all controllers (PFRC as well as EOCs) will be held separately in the Abbotsford area within two to three weeks of exercise completion. Location, date and timing to be confirmed separately.

THUNDERBIRD 3

SECURITY/ATTENDANCE LIST - OBSERVERS

NAME	ORGANIZATION	DATE EXPECTED	TIME EXPECTED
Tony Badowski	New West Emergency Program		
s.22	Guest		
Terry Bysouth	Delta Parks & Rec		
Sandy Chess (Lt(N))	DND		
Francis Cheung	Port Coquitlam Fire Dept		
Gary Clermont	Corrections		
Mark Gajb	New West Emergency Program		
Steve Gamble	Port Coquitlam Fire Dept		
Stephan Gherghinoiu	Surrey Emergency Program		
Barry Krieck	District of Mission	29 Jan 98	Afternoon
Tyrone Larkin	Yukon Public Works	26 - 29 Jan 98	Full days
Brian Larrabee	Human Resources	28 Jan 98	
Vicki Larrabee	Human Resources		1 hour
Gary Manning	Port Coquitlam Emergency Program		
John McKinstry	BC Ambulance		
s.22	Guest		
Ron Reichelt	Port Moody Emergency Program		
Peter Robinson	BC Housing Commission		1 hour

NAME	ORGANIZATION	DATE EXPECTED	TIME EXPECTED
Colleen Rohden	Port Moody Emergency Program		
Ryna Selody-Joubert	Kwantlen College		
Gord Stewart	Delta Boudary Health Unit		
Terry Swain	Can Soc Safety Engr	28 and 29 Jan 98	Full days
Roy Thorpe	New Westminster Fire Dept		
Kathy Tull	Can Soc Safety Engr	28 and 29 Jan 98	Full days
Darryl Wallace	New Westminster Fire Dept		
Randy Wolsey	Delta Emergency Program		
Ian Wright	BC Housing Commission		1 hour

Org	Name	Commit	Events	PFRC Players	EOC	EOC Contact
FVA	Piere Gagnon	Y	Y	2 slots	Y (elec. areas)	
ABT	Pierre Gagnon	Y	Y	0	Y	
CWK	Pierre Gagnon	Y	Y	0	Y	
HHS	Wally Maguire	Y	Y	0		
KEN	Wally Maguire	Y	Y	0		
MPR	Ian Murray/Mike Davis	Y		0		
HOP	Scott Misumi	Y	Y	0		
MSN	Barry Kriek	Y		0		
LAC/LAD	Dave Palmer	Y	Y	0		
YXX	Mike Pastro	Y		0	Simcell	
FVH	George Rice	Y	Y	1		
BCB	John Bedingfield	Y	Y	John Bedingfield Jim Palmer?		
BCA	John McKinstry Doug Sager Pat Shaw	Y	Y	2		
BCF	Vern McKeen	Y	N/A	0	Simcell	
BCG	Greg Bennett	Y	Y	1		
BCH	Dwayne Needham	Y		1		
BTL	Dexada Jorgensen	Y	Y	1		

BCT	Jack Lovitt	Y	N/A	0	Simcell	
AGF	Ron Sera	Y	Y	Merv Wetzstein ?		
ELP	Brian Clark	Y	Y	1		
FIN	Ron Tannhauser	Y	Y	3		
FOR	Brian Radke/ Rick Clevette/ Darrel Orosz	Y		10		
COR	Marg Paonessa	Y	Y	1		
HUM	Dave Scott	Y	Y	5		
MAF	Dave Blake	Y		1		
THY	Marilyn Mattson	Y	Y	1		
RCM	Don Bindon	Y		1		
CNR	Ted Burke Terry Petry	Y		0		
CPR	Pat O'Shea Sergio Sabatini Darci Wright	Y		0		
WCE	Pat Mason Mike Bell	Y	Y	0		
AGL	Gerry Hirter Ryna Brideau Scott Patch	Y		Pat Harkness Barry Akehurst Ross McIntyre Michele Skuce? Marg Legault?		

				Debbie Rodrigue Sinead Byrne Kristin Pickup Donna Sitter Ginny Garner? Bob Kelly? Geoff Amy? PECC 2 more		
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THUNDERBIRD 3

EXERCISE INSTRUCTION

References:

- *Exercise Outline – Exercise THUNDERBIRD 3, July 1997*
- *Provincial Field Response Centre (PFRC) Guidance and Procedures Manual, 1997 (Part C)*
- *British Columbia Volcano Response Plan (Draft), November 1997*
- *Federal Interagency Volcanic Event Notification Plan (IVENP) (Canada), 1997, Interim (on limited distribution for federal/provincial interface needs only)*

Timing:

All times Pacific Standard Time. The exercise will employ the 24-hour clock system throughout.

Map:

South Western British Columbia (Scale 1:600,000), Sixth Edition, Revised 1993

THUNDERBIRD 3

1. GENERAL

1.1 General Idea

1.1.1 THUNDERBIRD 3 is the third in the series of provincial THUNDERBIRD exercises; it is designed to practice the Fraser Valley response to a major volcanic eruption. It will run over two days, January 28-29, 1998.

As in previous exercises, emphasis in THUNDERBIRD 3 focuses on learning and practicing operational procedures at the provincial/regional/district/municipal levels and incorporating recommendations from the post-exercises reports of previous exercises.

1.1.2 THUNDERBIRD 3 is a controlled exercise intended to be conducted through time-programmed input of incidents from a Master Events List (MEL) by control staff located at all participating levels. Nevertheless, this approach still allows considerable flexibility in terms of

reaction/response by both PFRC and EOC staffs.
Impromptu inputs will be inserted by controllers when considered necessary to keep the exercise moving in the desired direction.

1.1.3 The scope of the exercise has been limited to the early effects of a volcanic eruption as it impacts the operational area defined in the enclosed map insert (Annex D).

1.2 **Aim.** To exercise the Fraser Valley area of the Southwest Region in responding to the effects of a major volcanic eruption of Mount Baker in Washington State.

1.3 **Major Objectives.** During this major response exercise, determine the effectiveness of:

- regional emergency preparedness, structures, procedures and systems including the deployed PFRC and the various EOCs/response cells;
- regional and local authority crisis management operations and consultative procedures;
- PFRC interface with local authority and agency EOCs/response cells, including telecommunications, liaison and coordination; and
- PFRC/PECC interface.

1.4 **Specific Objectives.** Together with the major objectives, the

following specific objectives are sought:

- practicing the staffs of the regionally-based PFRC and regional/municipal EOCs in coordinating the overall response to a major emergency;
- confirming standard operating procedures for use during emergencies when PFRC/EOCs are activated;
- evaluating the provincial coordination and support arrangements interfacing with local authority structures, procedures and systems;
- practicing all participating organizations in meeting their operational goals during an emergency situation;
- familiarizing individuals involved in planning and coordinating emergency response with:
 - BC Volcano Response Plan (Draft), November 1997
 - organizations/agencies involved with emergency response,
 - coordination activities required with other organizations, agencies, groups and individuals, and
 - telecommunications, equipment and procedures necessary to conduct operations;
- testing and refining administration, liaison and management procedures in other than normal circumstances.

1.5 Concept. THUNDERBIRD 3 is intended to create a setting which is largely within BC's capabilities to handle effectively. Some selective federal assistance may be required and the exercise design will cater to this eventuality if raised. THUNDERBIRD 3 will be conducted using actual time (24-hour clock) and pre-determined weather conditions (e.g., wind direction in the exercise is from the south with rain on Day 1). If necessary, the Chief Controller may revert to an exercise time.

2. SCENARIO

2.1 Occurrence

2.1.1 Day 1

Mount Baker erupts violently at 0110 hours (PST) on January 28, 1998. The resultant ash cloud reaches as high as 15,000 feet. The eruption is accompanied by a 2.5 Richter earthquake, followed by continuous tremors. Pyroclastic flows overtopping the Tomyhoi Ridge create instantaneous, high-velocity mud flows in the Tamihiki and Slesse Creeks. The mud flows continue on to flood the Chilliwack River.

Simultaneously, major mud flows proceed through the Nooksack River system leading to severe, low-velocity, high volume flooding in the Sumas Prairie in the order of 2 to 3 times the 1990 flood levels (approximately 6 to 9 feet), which occurs between 0700 and 0900 hours. A

major slide at Wahleach Creek closes Highway 1 at 0600 hours.

The ashfall following the eruption accumulates to about 2 to 3 cm on the ground by 0700 hours, increasing to 10 cm by noon, when it finally ceases. The early ashfall is granular (sand-like) and changes to the consistency of flour by the time it stops. (Note: one needs to appreciate that volcanic ash is pulverized stone which is extremely heavy, e.g., a standard garbage can full of wet ash weighs about 1 tonne; a one-inch layer of dry ash weighs 10 lbs per square foot as it lands – also it does not melt away!!)

Darkness continues until noon; rain showers accompany the ashfall and last throughout the first day.

2.1.2 Day 2

Possibility exists that further eruptions of Mount Baker may take place along with minor earthquakes.

Weather conditions on Day 2 are dry with a continuing wind from the south.

2.1.3 Background Information

Attached at Annex E is a summary of the nature of volcanoes for familiarization purposes.

- 2.2 Damage Assessment.** *The volcanic eruption of Mount Baker causes widespread damage and significant casualties in the Fraser Valley between Mission/Matsqui to Hope inclusive, primarily due to mud flows, flooding and ashfall. The affected area immediately loses electric power when transmission and distribution systems fail due to equipment overheating from ash accumulation/ingestion as well as ash-induced short circuiting. Consequently, this halts water, sewage and other lifeline services essential to the maintenance of health and welfare. Similarly telecommunications, particularly telephone systems, are severely degraded and become worse as time passes; those few that survive unaffected are overwhelmed by customer demand. Exceptions are those high-priority emergency lines that remain operational through line load control; autotel also remains*

functional. Ashfall blanketing the transportation infrastructure in the Fraser Valley largely paralyzes vehicular movement due to slippery roads and owner concerns over potential serious engine damage by ingested ash. The eruption prompts a significant number of casualties involving some 300 dead and missing and a much larger number requiring hospitalization and medical attention. Most Valley medical facilities are continuing operations albeit with reduced capacity due to interrupted auxiliary power supply (frequent maintenance breaks and reduced fuel availability) and lack of water. Abbotsford and all local airports are closed until further notice; Vancouver International continues to operate normally throughout the event. All rail lines in the Valley are closed.

2.3 PFRC Status. Immediately following the volcanic eruption, earmarked provincial and agency staffs of the PFRC began making their way to the old Langley Court House (previously selected as the primary PFRC for an event of this nature) in the early morning hours of January 28 via vehicle and rotary wing aircraft (from the West), a combination of 4X4 vehicles and by foot (from the East). By 0800 hours January 28, the majority of the PFRC staff are in location and ready to commence operations at the old Langley Court House, which is located just outside the ash-affected area.

2.4 STARTEX

Situation Report No. 1 will be issued at 0815 hours, January 28 and it will provide a start-state summarizing in reasonable detail the situation as of that morning. Exercise play will then

develop based on event inputs by control staff and player reaction. Participants are to be at their assigned locations prepared to commence exercise play at 0800 hours, January 28, 1998.

3. CONDUCT

3.1 Exercise Conduct. THUNDERBIRD 3 is a two-day office hours paper exercise requiring no movement of people and equipment with the exception of the PFRC, which will be near maximum staffing provided by earmarked ministries and agencies. At their discretion, participating municipalities/agencies may wish to exercise selected elements of their emergency response resources.

The PFRC will participate with all major functions represented and operating; involved ministries/agencies are also providing EOC/Response Cells. These will be located as designated by each participating ministry/agency. An outline conduct listing the schedule of events and timings is attached at Annex A.

3.2 Exercise Control. The control staff at the PFRC will consist of approximately 10 exercise controllers operating from a Control/Evaluation Centre on the ground floor of the old Langley Court House. The controllers interact with the players by entering events using an appropriate insert method. Inputs are primarily in written form, simulating radio, telephone or fax messages. The controllers' role is to develop play in a logical and realistic manner and adjust the tempo as required by the Exercise Director, so that the maximum value is achieved by all participants. Controllers at ministry/agency EOCs/Response Cells will be reacting in likewise fashion.

3.3 Exercise Evaluation. The evaluation staff will comprise a small team whose purpose is to assess the effectiveness of applicable plans, policy, procedures and their implementation during the exercise. The team's observations contribute to the "lessons learned" from the overall exercise. The evaluators operate from the Control/Evaluation Centre and work in tandem with controllers. Separate instructions are provided for the evaluation team by the Chief Evaluator.

3.4 Exercise Debriefings and Reports. At the conclusion of each day's play debriefings should be conducted. These debriefings should be held by functional chiefs/managers or by control/evaluation staffs at the PFRC and ministry/agency EOCs/ Response Cells as circumstances require. A "hot wash-up" is scheduled for end of Day 2 ENDEX (January 29). Additionally, questionnaires will be distributed to all participants at the beginning of the exercise. These should be completed by ENDEX and left at the designated collection point prior to departure. Those participants not at the PFRC in Langley, but rather with ministry/agency EOCs/ Response Cells, should provide their local control staff with their completed questionnaires; these controllers are asked to forward consolidated returns not later than February 13, 1998, to the Exercise Chief Controller by mail (PEP HQ) or fax at (250) 952-4888.

Based on the comments and inputs from the hot wash-up, questionnaires and controller debriefings, a Post-Exercise Report on THUNDERBIRD 3 will be distributed to all involved by

approximately mid-April 1998.

4. ORGANIZATION

4.1 Exercise Management/Appointments. The following are the Exercise appointments for THUNDERBIRD 3:

Exercise Director Tony Heemskerk
Director, PEP

Chief Controller Gerry Hirter
Federal/Provincial Planner, PEP

Deputy Chief Controller Ryna Brideau
Exercise Planner, PEP

Senior Controller Scott Patch
Assistant Manager, Southwest Region,

PEP

Controllers (PFRC) Members, General Support Forces
(Pacific)

Controllers Exercise Design Team Members
(Ministry/Agency)

Chief Evaluator David Gronbeck-Jones
Municipal/Provincial Planner, PEP

Coach/Monitor Ross McIntyre

Emergency Management Division (JI)

*Evaluators
(Ministry/Agency)*

As coordinated by the Chief Evaluator

4.2 Participants. The following will participate in THUNDERBIRD 3:

Provincial Emergency Coordination Centre - Victoria (SIMCELL only)

Provincial Field Response Centre - old Langley Court House - Langley

Ministries of:

Attorney General

Forests

Transportation and Highways

Human Resources - ESS (including Non-Governmental Organizations (NGOs) and volunteers)

Municipal Affairs

Environment, Lands, Parks and Multiculturalism

Agriculture, Fisheries and Food

Finance and Corporate Relations

BC Ambulance Service

Justice Institute (PEP Academy)

BC Ferries (SIMCELL only)

BC Hydro

BC Gas

BC Telephone

BC Transit

BC Buildings

Fraser Valley Regional District (including Abbotsford and Chilliwack)

Village of Harrison Hot Springs

District of Kent
District of Maple Ridge
District of Hope
District of Mission
City and District of Langley
Abbotsford Airport
Fraser Valley Health Unit
Fraser Valley Coroner
"E" Division, RCMP
West Coast Energy
CP Rail
CN Rail
Emergency Preparedness Canada (BC/Yukon Region)
General Support Forces (Pacific) (GSF(P))
Provincial Emergency Program

- 4.3 PFRC Appointments. Attached as Annex B is an organization chart of the PFRC showing appointments and members by name.

5. COMMUNICATIONS

- 5.1 A separate Communications Instruction for THUNDERBIRD 3 is contained at Tab B (Tab 5 in Control Instruction). This instruction includes a telephone/fax directory, radio frequencies and radio network diagrams. To promote realism within the ashfall scenario, telephone service will be intermittent.
- 5.2 The use of message forms should be in accordance with procedures covered during the December 1997 PFRC training.

To ensure exercise traffic does not interfere, or become confused, with normal routine business, participants are reminded that all exercise verbal and written communications must be preceded and concluded by the words "Exercise THUNDERBIRD 3".

6. ADMINISTRATION AND LOGISTICS

- 6.1 General. Participants within the PFRC should arrange their own transportation (and accommodation if required) during the exercise. Lunches will be provided.
- 6.2 Old Langley Court House. 20389 Fraser Highway, Langley BC. Attached as Annex C to this instruction is a diagram indicating an overview of the Court House and associated parking. Appendices 1 and 2 to Annex C show the interior layout of the Court House indicating rooms by exercise function.
- 6.3 Stationery/Maps. Stationery, including pens, pencils, marking pens, telephone message pads and the like will be provided. Exercise maps of the affected area in the Fraser Valley will be available for each Section of the PFRC. Players are encouraged to bring any specialized items, equipment or maps they consider useful for their specific role.
- 6.4 Security/Identification. Front and rear adhesive labels indicating individual appointments for players and control staff within the PFRC will be issued upon initial entry to the old Langley Court House by entry security. They are of the stick-on REUSABLE type and must be worn throughout the

active period of the exercise. Documents/papers pertaining to control and evaluation functions will be printed on pink paper and headed by "CONTROL STAFF EYES ONLY". Players will have access to white and green papers only.

- 6.5 Public Affairs.** As evidenced during previous THUNDERBIRD exercises, THUNDERBIRD 3 is certain to generate significant media interest prior to and during exercise play and events. The Public Information Officer (PIO) in the PFRC will manage exercise as well as “real”, media activities with the assistance of one or two additional assistants as arranged by the PIO.

ATTACHMENTS

Annex A Outline Time Schedule

Annex B PFRC Organization/Staffing

Annex C Overview: Old Langley Court House

Appendix 1 Room Allocation - Ground Floor

Appendix 2 Room Allocation - Second Floor

Annex D Boundary of Operational Area

Annex E Volcanoes - Background Information

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COMPONENT DUTIES

PFRC COMMANDER

- Manage operations of the PFRC
- Assess disaster
- Assign priorities
- Define Disaster Area
- Conduct planning meetings
- Coordinate Section Chiefs' work
- Authorize information releases
- Keep CCG informed
- Make recommendations to CCG
- Direct deactivation

EXECUTIVE ASSISTANT

- Contact for assisting and supporting agencies
- Link to additional agencies
- Facilitate external contacts
- Executive Branch log
- Review message traffic
- Supervise Executive Branch clerical help
- Other supporting duties

LOCAL/FEDERAL SUPPORT COORDINATOR

- Liaise with fed agency reps
- Arrange with EPC for additional assistance
- Can share duties with Executive assistant
- Liaise with local authorities
- Monitor states of local emergency
- Provide info about local government
- Negotiate use of local government facilities
- Liaise with local authorities for recovery planning

LIAISON OFFICER

- Keep track of agency representatives
- Brief Agency Representatives
- Assist planning to get damage and response info
- Look after agency reps
- Provide agency reps a link to the PFRC Commander

AGENCY REPS

Assist in overall coordination of provincial response
Represent their agency
Provide links to their agency's operations

SENIOR PUBLIC AFFAIRS OFFICER

Implement the Emergency Public Information plan
Supervise: briefing officers
PIOs
hotline operators
*Liaise with and controls media traffic

OPERATIONS CHIEF

Monitor status of provincial response
Advise Commander of provincial coordination needs
Provide tactical direction of PFRC coordinated operations
Maintain lists of critical resources
Brief Commander on operations and significant events
Manage Operations Branch staff
Request communications for operations

AIR OPS MANAGER

Identify and tracks air resources
Assign air resources
Arrange for air resources
Implement tactical air operations
Coordinate with Transport Canada
Brief Operations Chief

PLANNING CHIEF

Produce PFRC Action Plans
Establish information requirements
Assess overall situation
Prepare contingency plan
Monitors resources
Obtains technical information (from specialist sources, e.g., seismologist, volcanologist, linguist, etc.)
Identify needed special resources
Compile and displays info

DAMAGE ASSESSMENT MANAGER

Implement Damage Assessment emergency response function plan
Gather damage information reports
Produce damage assessment
Identify information gathered

LOGISTICS

Manage Logistics Branch
Participate in action planning meetings
Coordinate resources distribution and tracking
Prepare functional support plans
Draft requests for resources

TRANSPORT MANAGER

Implement Transportation emergency response function plan
Get transportation damage assessment and restrictions
Assist police in developing and maintaining traffic control plan
Coordinate repair, redesignation & control of major arterial connections
Maintain transport resources lists
Draft public information releases regarding transportation routes

RESOURCE SUPPORT MANAGER

Implement Resource Support emergency response function plan
Develop and maintain resource lists
Monitor resource procurement
Control loaned resources

HUMAN RESOURCES MANAGER

Implement Human Resources emergency response function plan
Develop and maintains contact lists
Arrange transportation & accommodation for personnel
Track personnel costs and compensation
Ensure volunteers are registered and looked after
Ensure personnel demobilization

ENGINEERING & CONSTRUCTION MANAGER

Implement E&C emergency response function plan
Coordinate material & personnel
Arrange for resources outside area
FOOD & AGRICULTURE MANAGER

Implement Fin & Admin emergency response function plan

Coordinate support to the Agri-food sector
Arrange bulk foodstuffs and water
Coordinate requirements for pets

COMMUNICATIONS MANAGER

Draft & implement PFRC comms instruction
Advise Logistics Chief on communications
Supervise communications support section
Assist other agencies with Comms

COMMS TECHNICAL SUPERVISOR

Procure, install & maintain:

- communications eqpt
- data processing eqpt
- audio/visual eqpt

COMMS CENTRE SUPERVISOR

Supervise Communications Centre staff
Establish message procedures
Route outgoing messages
Distribute incoming messages

CLERICAL SUPPORT MANAGER

Assign clerical support staff
Establish internal message handling system
Supervise office procedures
Control filing of logs & messages
Control stationery

MOBILE SP MGR

PERS SP MGR

FACILITIES MGR

Locate & assign PFRC workspace
Helps with Comms planning
Arrange sufficient support staff
Arrange for housing & feeding PFRC staff
Arrange office and other PFRC eqpt

SECURITY SUPR

FINANCE/ADMIN CHIEF

Implements Fin & Claims emergency response function plan

- *Control cost of running PFRC

- *Gather & analyse cost of disaster/emergency for into to CCG&Cabinet

- *Provide local authority on procedures for cost tracking, contracting, DFA

EXERCISE THUNDERBIRD 3

DAMAGE ASSESSMENT

General

As agreed at the Exercise Design Team meeting for THUNDERBIRD 3 on September 10, 1997, the following outline scenario setting and accompanying damage assessment is to be utilized by all EDT members when developing their organization's exercise events over the next month. Please remember to fax events to PEP (250) 952-4888 by October 14, 1997.

Overview

Day 1

Mount Baker erupts at 0110 hours on January 28, 1998. The resultant ash cloud reaches as high as 15,000 feet (approx. 5000 metres), and is accompanied by a 2.5 Richter earthquake, followed by continuous tremors.

Pyroclastic flows overtopping the Tomyhoi Ridge create instantaneous, high-velocity mud flows in the Tamihi and Slesse creeks. The mud flows continue on to flood the Chilliwack River.

Simultaneously, major mud flows proceed through the Nooksack River system leading to severe low-velocity, high volume flooding in the Sumas Prairie in the order of 2-3 times the 1990 flood levels (about 6-9 feet), which occurs between 0700 and 0900 hours.

A major slide at Wahleach Creek closes Highway 1 at 0600 hours.

Ashfall is about 2-3 cm on the ground at 0700 hours, and reaches 10 cm by noon, when it finally ceases. The early ashfall is granular (sand-like) and changes to the consistency of flour by the time it stops. (Note: 1 green garbage can of wet ash weighs about 1 tonne).

Darkness continues until noon; rain showers accompany the ashfall and last throughout the first day.

Abbotsford and all local airports are closed.

Day 2

On the morning of January 29, 1998, at approximately 0900 hours, a second explosive eruption occurs, accompanied by a 2.5 Richter earthquake, which causes a further 2-3 cm of dry ash to fall, stopping around 1100 hours.

Weather conditions for the second day are dry.

Damage Assessment

1. Buildings

- Homes: 1 % of single and two-storey homes are uninhabitable = 700 units (or up to 2500 persons require shelter)
- Low/Medium/
High Rise: minimum impact
- Schools: Up to local authorities to determine what they can use based on age and construction.
- Hospitals:
 - Hospitals function with auxiliary power on a cycle of 4 hours operational and 2 hours shut-down for maintenance.
 - There is an increase of 20% in phone calls and visits to the emergency room by people with various respiratory problems.
- Industrial/
Warehouses: 1% are unusable.

2. Services and Lifelines

- Transit:
 - Local transit is largely non-functional
 - Lower Mainland transit standing-by to assist on request
 - Hospital patients movement may occur between 01/1400 and 02/0900
- Rail:
 - Rail travel through the Fraser Valley is halted
 - A transcontinental passenger train is stranded at Vedder Bridge around 0900 hours (350 passengers stranded).
- Ferries: BC Ferries can navigate small ferries along the Fraser River as far inland as Agassiz.
- Water/Sewer:
 - Water systems with surface intake are severely affected, closing most routine sources of water.
 - Storm sewers clogged by ash.
 - Sanitary sewer pumps will stop.
 - Well pumps affected due to loss of power.
- Hydro: Power out indefinitely throughout the whole operational area.
- Gas: Reduced service; redistribution of gas to residences and small commerce, at the expense of industrial customers.
- Fuel/Oil: No source of fuel in affected area due to contamination and lack of power for electric pumps.

- Airport:
 - Abbotsford, Langley and Chilliwack closed until 01/1400. They will operate until dusk and be closed on day 2 due to fresh and dry ashfall.
 - Vancouver International open throughout.
- Communications:
 - Telephone
 - Unreliable from the outset, degrading progressively during day 1
 - High-priority emergency lines remain operational (line load control)
 - Autotel is fully functional
 - Cellular is hit-and-miss at best by the end of day 1.
 - All telephone communications on day 2 are worse.
 - Radio
 - Local radio stations not operational
 - Radio stations outside affected areas are OK, and can be picked up by battery operated radios only.
 - Amateur Radio
 - Increasing static due to ashfall
 - Shorter wavelengths suffer more interference.
 - Radios operational between 0800-1200 and stop until the end of the exercise.
 - Television
 - Unusable throughout due to cable and power problems.
 - DND Coms
 - Any communications outside the affected area are available on request by local authorities through the province.
- Casualties
 - Fatalities
 - 30 immediate (mud flows, structure collapse) in the Abbotsford and Chilliwack areas
 - 20 “after-the-fact” throughout the Abbotsford/Chilliwack area on day 1
 - 25 additional on day 2, throughout Abbotsford/Chilliwack
 - 200 missing, presumed dead in the Chilliwack River area
 - Hospitalization
 - 600 throughout the affected area
 - Medical Attention
 - 1500 throughout the affected area

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

2 days

Insertion Day/Time:

01/1400

Insertion Method:

telephone call

Originator:

PFRC

Recipients:

EOC - AGF (Abbotsford)

Short Title:

Livestock barns and greenhouses collapse - labour needed

Description of Event:

Abbotsford area dairy, poultry and greenhouse farmers have called in for help to save animals and crops due to collapsed roofs of dairy barns, poultry barns and glass greenhouses as a result of wet ash weight. They need labour and machines particularly to lift roofs and save the lives of trapped animals and if possible retrieve temperature-sensitive tomato, cucumber and flower crops that can be salvaged.

Reports are starting to come in about heavy damage to all farm buildings, mainly greenhouses and other livestock facilities due to ash fall; there is a heavy concentration of these kinds of structures in the affected area.

Purpose and Evaluation Issues:

Determine what capacity exists to find labour quickly to rescue animals and crops, and how easily can safe routes be found and travel arrangements be made to get to damaged areas.

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

- uncertainty in finding any labour available; not knowing where to look or who to contact

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:
2 days

Insertion Day/Time:
01/1430

Insertion Method:
telephone

Originator:
AGF Control

Recipients:
CWK (dist. of Chillwack)

Short Title:
Water contamination - livestock

Description of Event:
Chilliwack dairy farmers have called the Dist. of Chilliwack operations center asking for help from any suppliers who can provide pumps and filtration systems that work to get clean water to animals. Existing pumps don't have systems to filter out ash and are being destroyed as they're used.

Purpose and Evaluation Issues:
Determine if equipment is available

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:
1 day

Insertion Day/Time:

01/1500

Insertion Method:

fax

Originator:

AGF-control

Recipients:

AGF-EOC

Short Title:

Animals ingesting ash contaminated water and air

Description of Event:

Farmers are phoning the EOC -AGF wanting veterinarian advice on treating animals that have drank water from a pasture dugout contaminated with ash. Abbotsford area dairy farmers have called in, poultry producers say birds are breathing in ash and are sick or dying. What should they do.

Purpose and Evaluation Issues:

Determine how veterinarians would respond; what information is available

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

- would have information fairly readily available, but unsure how to get info out quickly

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

1 day

Insertion Day/Time:

02/1130

Insertion Method:

Fax to EOC - AGF

Originator:

AGF control

Recipients:

EOC - AGF

Short Title:

Animal carcass disposal

Description of Event:

Abbotsford dairy farmer (2 km north of Abbotsford on Mt. Lehman Road) reports 50 cows killed due to barn collapse from ash. He needs a large front end loader or equipment to lift the barn structure to remove dead and injured animals. Roads are treacherous due to wet ash. Can someone get some help to him? He wants to dig a pit to dump the dead animals. Is this okay?

Purpose and Evaluation Issues:

Proper procedures for carcass disposal; permission from local authorities and M. of Env.

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

Insertion Day/Time:

02/0900

Insertion Method:

hand carry note

Originator:

AGF Control

Recipients:

PFRC - AGF desk

Short Title:

Flooding - animal evacuation

Description of Event:

Reports of major flooding of the Nooksack River and surrounding Sumas Prairie area are coming in and farmers needing help to evacuate dairy, chickens and hogs to higher areas. We don't know the extent of flooding as yet, but could use more information from anyone who has it. Farmers quickly need trucks and places that are available to handle animals until the flooding subsides.

Purpose and Evaluation Issues:

Determine availability of trucks, and locations

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

1 day

Insertion Day/Time:

02/1100

Insertion Method:

hand carry

Originator:

AGF control

Recipients:

PFRC - AGF

Short Title:

Human drinking water contaminated

Description of Event:

Fraser Valley area water systems are feared contaminated by ash; water from local watershed reservoirs is declared unsafe to drink. Large amounts of bottled water will be needed within 2 days. What is the extent of supply available, and are there any suppliers of purified water or water purification systems in the southern BC area?

Purpose and Evaluation Issues:

Find sources of water purification systems and bottled water

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:
2 hours

Insertion Day/Time:
02/1300

Insertion Method:
hand carry

Originator:
AGF - Control

Recipients:
PFRC - AGF

Short Title:
Food safety - vegetables

Description of Event:
The public is flooding the media and health officials with calls asking if the vegetables now in stores or vegetable stands (Granville Island) are safe to eat as a result of ash contamination. They want to know if inspectors have tested the products. Who's responsible?

Purpose and Evaluation Issues:
Linkage with Agriculture Canada, Ministry of Health, and community health agencies regarding food inspection process, and information regarding handling of food by consumers.

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):
Watch for involvement by public information staff; need to search for information from Health officials

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:
1 day

Insertion Day/Time:

02/1300

Insertion Method:

Fax to EOC - AGF

Originator:

AGF - control

Recipients:

EOC - AGF

Short Title:

Milk storage and trucking problems

Description of Event:

Abbotsford dairy farmers have complained that the Dairyworld trucks can't get to their farms due to highway and road closures from ash hazards. Their tanks are now full (2 day limit generally) and need some way to get their milk to any dairy plant or it must be dumped somewhere.

Purpose and Evaluation Issues:

Finding trucks and determining handling of milk; health factors of dumping milk; public reaction to dumping milk when it's needed in place of contaminated water

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

Insertion Day/Time:

02/1330

Insertion Method:

Fax to MSN control

Originator:

MSN (Mission district office)

Recipients:

PFRC - AGF

Short Title:

Horses sick - Mission

Description of Event:

A Mission area race horse owner has phoned and said his 4 very expensive horses are very sick and nearly dead; they have breathed in ash. He can't get any veterinarians to come out to see his animals. What can he do? He wants help now.

Purpose and Evaluation Issues:

Determine priority of issues and service

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

2 hours

Insertion Day/Time:

01/ 1500

Insertion Method:

phone

Originator:

AGF-control

Recipients:

Ambulance service desk

Short Title:

Farm workers trapped in collapsed greenhouse

Description of Event:

Workers in the large Houweling greenhouse operation near the Ferry Terminal are trapped under collapsed glass greenhouses as a result of the small earthquake that occurred during the volcano eruption. They need ambulances. They don't know if there are any fatalities at this point.

Purpose and Evaluation Issues:

Test ability and capacity of emergency health services in that area

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

Insertion Day/Time:

Insertion Method:

Originator:

Recipients:

Short Title:

Description of Event:

Purpose and Evaluation Issues:

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

Control Staff Eyes Only

Thunderbird 3

Play Event Detail

Ministry/Agency Code: AGF

Duration:

Insertion Day/Time:

Insertion Method:

Originator:

Recipients:

Short Title:

Description of Event:

Purpose and Evaluation Issues:

Related Play Events:

Special Controller Instructions:

Anticipated Player Reaction (for Controllers/Evaluators):

BC GAS UTILITY LTD

EXERCISE THUNDERBIRD 3

28 AND 29 JANUARY 1998

FRASER VALLEY EMERGENCY CENTRE

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 001

Duration:

30 minutes

Insertion Day/Time:

01/0915

Insertion Method:

Telephone

Originator:

BCG Fraser Valley Emergency Center

Recipient:

PFRC (BCG Liaison Officer if playing at the PFRC)

Short Title:

BCG Situation/Status Report # 1.

Description of Event:

The BCG Crew at Huntingdon reports that the flood water at Huntingdon is continuing to rise. The water is approximately 6' deep and they are now unable to get out of the facility. BCG is attempting to organize the rescue of this crew.

Gas supply to the Lower Mainland communities WEST of Abbotsford is reduced to below normal for this time of year. This is due to the reduced pressure resulting from the damage to the West Coast Energy pipeline at their Rosedale compressor and, the loss of telemetry from our Huntingdon facility.

Gas supply in the Abbotsford to Hope area is also below normal due to the loss of the Line Heaters on our Distribution System.

BCG has completed extensive shedding of all of its Lower Mainland major industrial customers. BC Gas may have to

request Centra Gas shed most of its major customers on Vancouver Island for BC Gas to be able to continue supplying the Lower Mainland Municipal priorities. (Hospitals/Reception Centers/First Responder facilities)

Will advise as quickly as possible if the supply situation changes.

Purpose and Evaluation Issues:

Information handling within the PFRC. Responding to a changing situation.

Related Play Events:

Connects to West Coast Energy's loss of their Rosedale compressor site.

Special Controller Instructions:

Warning of potential Gas supply shortage on Vancouver Island should be advised by the PFRC to the Provincial Emergency Program PECC.

Anticipated Player Reaction(for Controllers/Evaluators):

Unknown.

BCG 001/page 2 of 2

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 002

Duration:

One hour or until rescue is successfully completed.

Insertion Day/Time

01/1000

Insertion Method:

Telephone

Originator:

BCG Fraser Valley Emergency Center.

Recipient:

PFRC(through BC Gas Liaison Officer if playing at the PFRC)

Short Title:

Request for Rescue Assistance

Description of Event:

BCG has contacted all known sources of helicopter and local boat operators in their attempts to effect a rescue of their Crew trapped by the rising flood waters at their Huntingdon Station. BCG request the assistance of the PFRC in obtaining a helicopter or a boat to execute this rescue immediately. The BCG crew members are on the roof of the Huntingdon Control building and are afraid the building is going to collapse due to the weight of the wet ash accumulating on the roof.

Purpose and Evaluation Issues:

As the ash is still falling it is unlikely that any owner will want to risk their aircraft in these conditions. However, given the need to rescue the BCG Crew from a potentially dangerous situation it should be worthwhile to observe the approach that the PFRC staff take in handling this event.

Related Play Events:

Unknown at this time.

Special Controller Instructions:

Refer to above Evaluation Issues.

Anticipated Player Reaction(for Controllers/Evaluators):

Pass to PECC for discussion with DND re helicopter availability/ and with FEMA or Whatcom County for any assistance available from south of the USA border. The PFRC staff may also check with the Abbotsford Municipal EOC to see if they have any ability to assist BCG in the rescue of their crew.

BCG 002/page 2 of 2

BC GAS UTILITY LTD

EXERCISE THUNDERBIRD 3

28 and 29 JANUARY 1998

FRASER VALLEY EMERGENCY CENTER

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 003

Duration:

30 to 60 minutes

Insertion Day/Time

01/1100

Insertion Method:

Telephone

Originator:

BCG Fraser Valley Emergency Center

Recipient:

PFRC

Short Title:

BCG Situation/Status Update # 2

Description of Event:

BCG has lost it's telemetry feeds and radio communications from Abbotsford east to Hope.

The BCG Fraser Valley Emergency Center is no longer in contact with its Central and Eastern Fraser Valley facilities nor it's mobile crews. This loss of communications is seriously hampering the BCG efforts to maintain the Gas System in the volcanic ash fallout area. Many of the crew vehicles are no longer road worthy because of ash contamination in their engines. Some of the crews are suffering breathing problems because of the lengthy exposure to the ash.

BC Gas can now only respond to life saving and serious emergencies. If the situation deteriorates further it may be necessary

to shut off some areas until such time as our crews are able to operate safely in the ash fallout area.

At present BCG only has contact with the Abbotsford EOC. Assuming that PFRC has established communications with the Chilliwack, Rosedale/Kent/Agassiz and Hope EOC's, it is requested that the PFRC advise BC Gas ASAP what the priorities for gas supply are in these Municipalities .

Purpose and Evaluation Issues:

Request for the PFRC to provide assistance to a Utility which is not in contact with all of the Municipal EOC's.

Related Play Events:

None

Special Controller Instructions:

BCG facilities and crews are predominately located and reside in the more populated communities. Thus they are not able to effect liaison with all of the smaller Municipalities and Districts early in any emergency. Assistance from the PFRC will be an important source of information for all Utilities and may form the basis on which many of the Utilities' early response and recovery plans are formulated.

Anticipated Player Reaction(for Controllers/Evaluators):

While this task may well place an additional burden on the PFRC staff , they are likely to be one of the few Emergency Centers which is in contact with all or at least most of the Municipalities. The gathering and sharing of vital information is essential to an effective and coordinated response and must be accepted by the PFRC staff.

BCG 003/page 2 of 2

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 004

Duration:

30 minutes

Insertion Day/Time

01/1400

Insertion Method:

Telephone

Originator:

BCG Fraser Valley Emergency Center

Recipient:

PFRC

Short Title

BCG Situation/Status Report # 3

Description of Event:

Gas supply shortage is being compounded by the need to continue supplies to major industrial users such as BCH Burrard Thermal Generation Plant and to Centra Gas on Vancouver Island.

In order to maintain supply to the identified Municipal priorities in the ash fallout area; and continue to provide residential heating and cooking capabilities in the remaining Lower Mainland communities; further shedding of a large volume customer will be required in the next two hours. Centra Gas has already shed most of its industrial and interruptible customers but will have to shed even further as BCG must continue to reduce supply to Vancouver Island

Purpose and Evaluation Issues:

Cutbacks in some utility services and shut downs of industrial and large volume customers far from the impacted area will be difficult for some individuals to accept or understand, and will likely result in many questions being asked of the PFRC staff. This is a good opportunity to ensure that all of the potential PFRC staff understand that the Lower Mainland and Vancouver Island are supplied both hydro and natural gas from the end of a long supply line and that there are little or no capabilities for supply from other sources in the event of any serious emergency.

Related Play Events:

None identified at this time. It may be desirable to add one or two events which are inquires from Agencies in the Lower Mainland and/or Vancouver Island concerning the loss or reduction in their gas supplies.

Special Controller Instructions:

None at this time.

Anticipated Player Reaction(for Controllers/Evaluators):

TBA

BCG 004/ page 2 of 2

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 005

Duration:

one hour

Insertion Day/Time

01/1530

Insertion Method:

Telephone

Originator:

BCQ Fraser Valley Emergency Center

Recipient:

PFRC

Short Title

Vehicle refueling -- request for assistance

Description of Event:

Having difficulty locating any refueling sources in the Abbotsford to Hope area. BCQ is trying to minimize the distances being traveled by our vehicles in order to prolong their serviceability . Can the PFRC set up a refueling point in the vicinity of Highway 1 and the McCallum road interchange on the WEST end of the ash fallout: and a second refueling point in the EAST in the vicinity of Hope. These points should be mobile so that they can be moved into the impacted area as the clean up progresses

Purpose and Evaluation Issues:

To provide the PFRC staff with the opportunity to undertake a Logistics problem which in the real event would be a realistic requirement needing to be addressed at a very early point in the response. It is likely desirable that this event be moved to a much earlier time in the exercise.

Related Play Events:

None identified at this time. It may be desirable to combine one or two issues which are unique to other Agencies participating in the exercise with this event to create a larger and more challenging Logistics task.

Special Controller Instructions:

None at this time.

Anticipated Player Reaction(for Controllers/Evaluators):

This issue should be one of many with which the Logistics staff are attempting to deal with. All of the emergency responders in the affected area are going to need the full support of the PFRC if they are to continue functioning until the power is restored.

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 006

Duration:

30 minutes to one hour

Insertion Day/Time

02/0915

Insertion Method:

Telephone

Originator:

BCG Fraser Valley Emergency Center

Recipient:

PFRC

Short Title

BCG Situation/Status Report # 4.

Description of Event:

Over night the BCG crews have been able to carry out clean up and repairs on our Stations on the periphery of the ash fallout area in the Abbotsford and Hope communities. Gas supply to all of the Municipal priorities is continuing. Regretfully the eruption this morning has all but shut down the repair efforts until the ash fall ceases. Assuming it will stop around noon hour as it did yesterday, how quickly will Hwy 7 from Mission to Agassiz and Hope be cleared of ash and opened to our Crew vehicles? Unable to contact any MOTH representatives. Need your response ASAP in order to plan ongoing recovery efforts.

Purpose and Evaluation Issues:

Status update for the PFRC and a request for assistance in gathering essential planning information critical to the scheduling of crews and materials into the areas being recovered.

Related Play Events:

None identified at this time.

Special Controller Instructions:

None at this time.

BCG 006/ page 2 of 2

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 007

Duration:

30 minutes

Insertion Day/Time

02/1100

Insertion Method:

Telephone

Originator:

BCG Fraser Valley Emergency Center

Recipient:

PFRC

Short Title

Sumas River/Prairie Flood Duration Forecast

Description of Event:

Huntingdon Station is continuing to operate while submerged and our crews patrolling the site by boat have not detected any problems thus far. BCG request a forecast of when the flood waters will recede at Huntingdon so that a full risk assessment concerning the likelihood of Station failure can be undertaken. There was still 6' of water in the Control building as of 1000 o'clock this morning, down from 9' yesterday afternoon.

Purpose and Evaluation Issues:

Provide the PFRC staff with an opportunity to forecast the flooding aspect of the emergency and to translate their forecasts into site specific information as required in this event for the BCG Station at Huntingdon.

Related Play Events:

None identified at this time.

Special Controller Instructions:

None at this time.

BCG 007/ page 2 of 2

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 008

Duration:

30 minutes to one hour.

Insertion Day/time

02/1130

Insertion Method

Telephone

Originator:

BCG Fraser Valley Emergency Center

Recipient:

PFRC

Short Title

BC Gas Public Safety Warning

Description of Event:

BC Gas has re-assessed the situation at its Huntingdon facility and has determined that there is a possibility that unodourized natural gas may have entered the Lower Mainland Gas supply system due to flood damage to the odourant supply tanks at Huntingdon . BC Gas is monitoring this problem and will advise if any action is required.

In the interest of Public Safety all customers in the flooded areas are being warned that they must have all of their gas appliances inspected by a licensed gas fitter or technician before BC Gas can restore their service.

A BC Gas News Bulletin is being prepared now and is to be released to the media by noon today. A copy of the News Bulletin will be faxed to the PFRC as soon as it is ready for release.

Purpose and Evaluation Issues:

To provide a public safety issue based on a potentially realistic scenario. The PFRC staff should assess the hazard by questioning BC Gas about the risk, likelihood of occurrence, duration, is there a need to shut down the system, type of repairs required and any assistance required from other agencies.

Related Play Events:

None identified at this time.

Special Controller Instructions:

Nil

BCG 008/ page 2 of 2

BC GAS UTILITY LTD

Control Staff Eyes Only

THUNDERBIRD 3

PLAY EVENT DETAIL

Ministry/Agency Code:

BCG 009

Duration:

30 minutes to one hour

Insertion Day/Time

02/1400

Insertion Method:

Telephone

Originator:

BCG Fraser Valley Emergency Center

Recipient:

PFRC

Short Title

Central and Eastern Fraser Valley Gas System Shutdowns

Description of Event:

Because of the loss of the heaters at our Chilliwack/Achelitz/Rosedale and Agassiz stations, the natural gas distribution system must be shut down due to the regulators and other gas line components starting to freeze. Will not be able to relight our customers in those areas until the Electrical power has been restored.

Purpose and Evaluation Issues:

To provide a realistic damage scenario and expose the PFRC staff to what will most likely occur under the scenario being portrayed in this exercise. The PFRC staff should eventually realize that as time passes and more ash falls, the ability of the Utilities to quickly restore services becomes less likely.

Related Play Events:

None identified at this time.

Special Controller Instructions:

None

BCG 009/ page 2 of 2

•THUNDERBIRD 3 PXR (EVALUATION)

BACKGROUND

Thunderbird 3 was the third in a series of provincial response coordination exercises, but the first to focus on a hazard scenario other than an earthquake. The decision to do so was based primarily on a desire expressed by the participating provincial agencies to add some variety to the exercise schedule.

The decision to focus training on response to a volcano event was somewhat problematic:

- There was in existence no provincial volcano response plan similar to the *British Columbia Earthquake Response Plan*. While it is not unreasonable to expect a “generic” response to be effective based on existing plans and procedures, the training objective of the Thunderbird exercises required “hard copy” documents from which to teach, and as a basis for evaluation of participant performance.
- The scenario of a Mount Baker eruption, though well-explained in details provided by the Geological Survey of Canada’s highly experienced volcanologist, Dr. C. Hickson, remains a low-probability event in this century and there was a reluctance for agencies, local governments and the media to “buy into” the scenario. As a result, lacking the lower-level planning for detailed actions in a volcano scenario, there was considerable “hip-shooting” by players because they did not know what they should be doing in a given event.

The pre-exercise activity attempted to overcome these problems. A draft *British Columbia Volcano Response Plan* was produced to cater to the precise hazard scenario to be exercised, but it could not be staffed beyond the exercise participants because plan development was not an identified high priority at the inter-agency level. Therefore, detailed ministry and agency responsibilities were only broadly stated in the plan, and it is doubted that any ministry or agency developed these into probable tasks. During the pre-exercise training week, participants and controllers discussed the plan, and were familiarised with detailed volcano effects by Dr. Hickson, whose support to the entire exercise development and conduct was excellent.

Still, there were a considerable number of exercise participants who did not attend the above-noted training, and as a result their municipality, ministry or agency’s actions could not be objectively evaluated. While it is not the purpose of this evaluation to dwell on each individual event, the unpreparedness to respond in a sensible manner was certainly highlighted by the community who decided to evacuate a part of its jurisdiction and house evacuees in tents, many kilometers from the community, during a wet ashfall period. This would have been impossible to achieve.

EVALUATION OBJECTIVES

The Evaluation Team sought to assess the usefulness of *Provincial Field Response Centre Guidance and Procedures* in a major response coordination other than an earthquake. The

procedures are stated to be applicable in such an event. Secondly, the draft *Volcano Response Plan* (incomplete) was being evaluated to see if it needed to be changed prior to eventual ministry coordination and completion.

Because these objectives were not particularly onerous, the team also paid attention to two particular functions which had been consistently subjected to scrutiny in the past and which had made significant changes to their approach to their responsibilities: Communications and Emergency Social Services.

EVALUATION TEAM

The Team was less formally structured than for past exercises, and spent most of the time during the exercise coaching players to react in accordance with the noted plans and procedures.

- Chief Evaluator- David Gronbeck-Jones (PEP Headquarters)
- Evaluator- Ross McIntyre (Instructor, PEP Academy)

Ex-officio (reports were submitted to the Chief Controller and Chief Evaluator):

- Communications- Nigel Bell (Industry Canada/Communications)
- ESS- Laurie Pearce (MHR / MCF)

Evaluation points were also drawn from comments submitted by participants (elsewhere in this report) and from verbal comments at the Controllers Debrief.

“NO FAULT” EVALUATION

The evaluation points are not directed at any individual, but rather at the plans and procedures in place for a Lower Fraser Valley major emergency, organizational preparedness, and a few other significant (and unexpected) criteria which surfaced during exercise play.

OBSERVATIONS AND RECOMMENDATIONS

1. Draft *British Columbia Volcano Response Plan*

As noted in the preamble to the evaluation, this document has no formal status and was created for the exercise. While the hazard assessment within it is correct, and the general response concept is supported by regulation, there has been no inter-agency coordination of responsibilities and no subsequent development of plan detail.

If the plan is to be completed, it must be done at the level of the Inter-Agency Emergency Preparedness Council (IEPC) as was the *Earthquake Response Plan*. There is currently no plan to bring forward the matter to the IEPC.

Recommendation: PEP should table the *Volcano Response Plan* at the IEPC and recommend that it be completed and approved, commensurate with its relative importance in comparison with other plans and projects being undertaken by the IEPC.

2. *PFRC Guidance and Procedures*

Following a fourth revision prior to this exercise, it is the opinion of the Chief Evaluator that the document is suitable for the “needs of the moment”. This is stated bearing in mind that the BC Emergency Response Management System is undergoing development, and continuing government reorganization has made ministry responsibility assignments inaccurate. The document needs a “routine” updating as a result of the latter development, and may need significant change (at a future date) as a result of BCERMS deliberations.

Training. There continues to be a sharp learning curve for exercise participants who are exposed to the *PFRC Guidance and Procedures* for the first time. This is overcome through training, but some participants manage to avoid the training that is so critical to their effective performance and continued education in the Thunderbird exercises. **This is the fourth consecutive exercise evaluation in which this comment has been made.**

Recommendations: No change to *PFRC Guidance and Procedures* directly attributed to this exercise. Before the next exercise, through the IEPC, Deputy Ministers and their equivalents in Crown Corporations, and local authorities, should be advised of this recurring problem and seek their support to correct it.

3. *PFRC Organizational Adjustments during exercise*

In an attempt to correct perceived internal communication problems, the PFRC Commander directed a move of the Operations and Planning branches into the same room as the Agency Representatives. This did not overcome the problems (which may have been caused by other factors).

Agency Representatives are in liaison to the PFRC as a means to coordinate support to their ministries’ and agencies’ regional EOCs. Although they are “captive” on-site during an exercise, in reality they would often come and go as their EOCs require them to. For some agencies, they would be semi-permanent residents as long as they needed support, but not necessarily all of them. Their real operational link to the PFRC is to the Commander. The PFRC staff coordinates operational and logistical requirements of agencies on the Commander’s behalf. Other matters are coordinated agency-to-agency, and *may* result in an interface at the PFRC.

The PFRC is structured into functional components based on what needs to be done, not where the components are physically located in a building. Inter-relationships, even those made difficult by walls in a building, are what need to be improved and practised in an exercise. If anything should have been moved into the Agency Liaison room, it should have been the Command Staff, but even that is not necessary to achieve effective Agency-PFRC communication and coordination.

In a real emergency PFRC activation, the physical arrangement of branches develops as the PFRC grows in size. From a start where all participants number only a few persons and can probably sit around a single table, the logical placement in different rooms (if necessary) evolves from actual needs. For an exercise, this process is eliminated, and a full staff starts the exercise already in compartments by branches. To focus on procedures and to get training value from the exercise events, the start-state physical layout should be left alone.

Recommendation: Training for future exercises should emphasise that the physical layout of a PFRC is not the over-riding concern. This becomes self-evident when the activation/mobilization scenario is brought into play.

4. Electronic Communications

There was a major improvement to the functioning of electronic communications in this exercise. The amateur radio operators performed extremely well, and there were several other non-telephonic communications resources in operation which worked well. Because this was an exercise, there was plenty of time to establish and test radio paths, etc. This is not a criticism, but the point is made because in this and other exercises held to date the availability of a building has been the prime consideration for the location of the PFRC.

Recommendation: Consideration should be given to exercising (regionally) the rapid set-up capability that would be required of PFRC communications in a real emergency. Emergency personnel (other than communications) should also recognise that in a real emergency the siting of a PFRC may be constrained by the need to communicate by radio both locally and back to Victoria. Selection of potential PFRC sites should, therefore, be done in conjunction with communicators.

5. Emergency Social Services

This was the first Thunderbird exercise in which ESS operated a regional EOC (the RESSOC), which was located in the same building as the PFRC. This was a late decision to do so, and there was some confusion about it amongst the ESS players and other players as well. The ESS evaluations dwelled on these matters and will lead to changes within the ESS organization that will solidify the RESSOC concept.

The Provincial Emergency Social Services Operations Centre (PESSOC) participated in this exercise as well, as part of ESS-only exercise objectives that were well beyond the scope of Thunderbird exercise play. This also caused confusion amongst players who did not recognise the organization as a higher-level functional resource of ESS without any operational link to a PFRC (it would link to ESS central headquarters and the PECC in Victoria).

It is the Chief Evaluator's opinion that the participation of the PESSOC in Thunderbird exercises as they are currently conducted is detrimental to the exercise objectives because:

- a. The PESSOC is not a regional resource. PESSOC roles and reactions cannot be exercised properly without the provincial central coordination level being introduced.
- b. The PESSOC roles and composition do not change, whereas each Thunderbird trains a new regional team. The experience differential between the PESSOC and PFRC is overwhelming to first-time players at the PFRC, and they have little concept of what the PESSOC is intended to do. Bad lessons are learned as a result.

Recommendation: That the PESSOC not be exercised in conjunction with the PFRC level. If PESSOC-like input is needed for a RESSOC to be effective, then it should be a control input that is collectively reviewed and agreed to by the Thunderbird Exercise Control team.

6. Other Evaluation Points, from Players and Controllers

The Chief Evaluator agrees with these comments, in general, however they did not represent overwhelming faults and were raised by only a few participants.

- a. The development of standard forms and associated financial procedures under the BCERMS should be accelerated so that they are available for the next Thunderbird exercise.
- b. Communication (passage of information) needed to be improved between all components.
- c. Some requirements were beyond the abilities of the players to achieve. This was in particular reference to the direction to the PFRC (from the PECC) to prepare a contingency plan for the orderly evacuation of a large portion of the population out of the danger area.
- d. Some felt the need for more procedures and checklists to be developed at agencies, municipal EOCs, and at the PFRC (notably in the Finance and Administration Branch).
- e. Too many staff meetings. No time left to do any work.

CONCLUSIONS

Despite the frustrations expressed by some in realising that the same comments arise nearly every exercise, it must be remembered that each exercise has nearly all-new players, is in a new locality, and involves EOCs in a provincial exercise for the first time. They are not serious problems, and in learning what a problem has been, the participants can see for themselves how to remedy the problem. Lessons have been taught in a valid way. There is not enough time to practice every player in writing a clear message in the classroom environment, but she will learn quickly “on the job” when requests get lost and/or go unanswered.

It was resoundingly voiced by the participants, and the Chief Evaluator agrees, that the exercise was very worthwhile and quite likely the most successful yet. Those who did not avail themselves of the training provided or even read the *PFRC Guidance and Procedures* and other documents provided, must certainly have wondered just what was going on for the better part of two days.

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #1 a)—Training

Many players did not understand, know of, get training on: PFRC and EOC structure, purpose, operation, administrative requirements (forms, etc.), and their job description and expectations.

Recommendation:

That PFRC players receive more frequent and detailed training. There should also be more exercises to practice what they have learned.

Issue #1 b)—Training

A group of provincial personnel should be earmarked to be trained and exercised regularly so that they can be truly beneficial during an exercise and for a real situation.

Recommendation:

That organizations set aside personnel to participate in thorough PFRC training, then participate in every Thunderbird as an overhead/expert team to assist local PFRC players.

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #1 c)—Training

EOC players did not receive EOC training prior to the exercise, making it difficult for them to understand what was expected of them.

Recommendation:

As PFRC players receive PFRC training, EOC players should receive EOC training.

Issue #1 d)—Training

The PFRC staff should be exercised by themselves before involving the local elements. They could iron out difficulties and be more efficient at the time of the major exercise.

Recommendation:

That small, lead-up PFRC exercises be conducted with EOCs simulated, then once practiced, real EOCs can be brought in for the next Thunderbird.

Issue #1 e)—Training

Players felt there should be more exercises, more often, some of which could be on a smaller scale before the provincial level ones. These should be mandatory for all agencies at all levels.

Recommendation:

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

TRAINING OBSERVATIONS

WORK ACTION:	CURRENT STATUS	ASSIGNED
<u>None Known</u> NOTE: NO table top exercises where held prior to Thunderbird 4	<u>March 24, 2021</u> <ul style="list-style-type: none">• The introduction of a new emergency management system should be complete by year-end.• The new system will included a long term training plan.• The formation of, All Hazard Emergency Management Teams is under consideration.• No further major exercises will be conducted prior to conduct of a series of function specific d table top exercises	<u>Director</u>

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #2 a)—Organisation/Procedures

Poor commitment showed by some organisations (by not participating at all, or only partially, or by reneging on their previous commitment) caused some serious gaps in the scenario and the flow of information, hampering the overall effort toward a successful, meaningful exercise.

Recommendation:

That contributing agencies dedicate time and staff to PFRC exercise - in preparation, PFRC training and participation. Those who commit should do so at each stage, and for the entire duration of the exercise.

WORK ACTION:	CURRENT STATUS	ASSIGNED
No action was take prior to Thunderbird 4 exercise and the same problem occurred.	March 24, 2021 1. DM Committee on Emergency Preparedness forms in March. 2. Committee intended to raise profile of emergency preparedness across government. 3. DM level involvement may insure all ministries participate.	

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #2 b)—Organization/Procedures

There should have been wide distribution of a list detailing who was playing or not, for how long, and whether a simulation cell would be in place.

Recommendation:

Those exercise design staffs includes this information with the Exercise Instruction, and distribute it during the exercise.

WORK ACTION:	CURRENT STATUS	ASSIGNED
<u>None known</u>		

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #2 c)—Organization/Procedures

Some municipalities strayed from the official scenario, causing confusion and frustration for players who were solving problems, and for controllers who were monitoring the flow of events. This generated unrealistic player reaction, and adversely affected the evaluation process.

Recommendation:

That municipal members of the Exercise Design Team bear in mind the realism of their inputs, produce events accordingly, and produce more events to ensure player activity. Events can always be deleted, but it is much harder to create new ones.

WORK ACTION:	CURRENT STATUS	ASSIGNED
<u>None known</u>	<ol style="list-style-type: none">1. Similar problems re-occurred during Thunderbird 4 and during response to Salmon arm fire and 1999 Freshet2. Current practice is to identify primarily contract for EOC to PFRC and vice versa.3. Current practice is to assign a PFRC liaison officer to each EOC.	<u>complete</u>

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #2 d)—Organization/Procedures

PFRC Communications

- Within it - most sections were not interacting with each other, chiefly because they did not know each other's functions, roles and responsibilities.
- With outside EOCs - did not interact well with regards to direction, situation reports, overall "big picture", answering requests, acknowledgement of information received, declaration of state of emergency.

Recommendation:

- That PFRC Commander and chiefs be aware of other sections' functions and concerns, and emphasise the importance of interaction.
- Those PFRC staffs strives to disseminate timely, accurate and relevant information to EOCs. Support both ways cannot occur without situation awareness.

WORK ACTION:	CURRENT STATUS	ASSIGNED
<u>None known</u>	<ol style="list-style-type: none"> 1. The introduction of a new emergency management system should be complete by year-end. 2. The new system will included a long term training plan. 3. The formation of, All Hazard Emergency 4. Current practice is to identify primarily contract for EOC to PFRC and vice versa. 5. Current practice is to assign a PFRC liaison officer to each EOC. 	

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #2 e)—Organization/Procedures

PFRC Direction

- The PFRC did not state its mission statement, nor did it provide its sections with direction, priorities and guidance. The EOCs felt they did not know what the PFRC intended for them either.
- Hourly meetings for PFRC sections were deemed too frequent for chiefs to filter the information, make plans and brief their staff on the actions to be taken. Since there was no priority setting, it was even more difficult to take action.

Recommendation:

- That PFRC Commander formulates a mission set priorities and ensures dissemination to all staff and outside agencies.
- That meetings are less frequent and contain specific priorities to be achieved as the event progresses.

WORK ACTION:	CURRENT STATUS	ASSIGNED
<u>None known</u>	March 24, 2021 The new management system coupled with training and table top exercises will solve these problems.	

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #2 f)—Organization/Procedures

PFRC/EOC physical configuration

- felt that the organisation of ESS into two components within the PFRC (ESS as Agency Reps and the RESSOC) was confusing and led to gaps in communications within themselves and with other sections. They should combine to form one ESS section.
- PFRC sections sharing similar concerns did not inform one another on points they could have co-ordinated. Being in different rooms raised communications barriers.
- Having two EOCs within Chilliwack (District of Chilliwack and Fraser Valley Regional District) was felt to be a confusing duplication of effort.

Recommendation:

- That ESS and RESSOC combine to form one ESS section at the PFRC.
- PFRC sections sharing similar concerns are co-located, as the building configuration permits.
- CWK and FVA EOCs should be combined, or at least have mutual agreements in place.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #2 g)—Organization/Procedures

Information Management

The management of information at all levels of operations (PFRC and EOCs) was not effective. Messages no tracking of incoming messages occurred, receipt of messages was not confirmed, priorities were not set, situation reports were not comprehensive, briefing boards were not in place for quick overview of situation, etc..

Recommendation:

That there be a central point of collection for information; messages should be clearly indicated as to their priority and action status ("FYI", "copy", "action", etc.); any messages incoming should be acknowledged.

WORK ACTION:	CURRENT STATUS	ASSIGNED
None known, similar problem occurred during Thunderbird 4	<u>March 24, 2021</u> 1. New emergency management system being purchased. 2. New BCERMs system will be introduced.	

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #3 a)—Exercise Preparation and Conduct

The Exercise Instruction was too vague, did not contain enough information on the plan to be exercised (Volcano Plan), and expectations. It was not consistent as some items referred to in the text were not included with the Instruction.

Recommendation:

That the contents be reviewed carefully for continuity and clarity. That plans to be exercised be added to the instruction. That missing information be included.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue # 3 b)—Exercise Preparation and Conduct

The Control Instruction and training were aimed at experienced control staff. It did not contain enough detail on responsibilities and event insertion.

Recommendation:

That the Control Instruction be made more detailed as to duties and expectations, and that a section on event insertion be added.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #3 c)—Exercise Preparation and Conduct

Event insertion was confusing to controllers in two ways: insert method/originator and determining which control (PFRC or EOC) inserts municipal events.

Recommendation:

That a practice session on event insertion be added to the control training.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue # 3d)—Exercise Preparation and Conduct

Exercise Design Team could have used more time to refine events, determine insertion and coordinate with other agencies.

Recommendation:

That a second meeting of the Design Team be called so they can refine events, coordinate insertion and ensure realism.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue # 3 e)—Exercise Preparation and Conduct

Event insertion was realistic - showed up in haphazard way, through numerous means (voice, phone, fax, runner, rumours, etc.) - like in a real situation.

Recommendation:

Control staff to be commended on a job well done.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #3 f)—Exercise Preparation and Conduct

Play slowed down considerably on Day 2 - many players (both PFRC and EOCs) were left with little to do.

Recommendation:

That Exercise Design Team create at least twice the number of events to keep momentum. Events can be deleted if tempo gets too hectic.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #3 g)—Exercise Preparation and Conduct

Control staff had a hard time “closing the loop”, tracking events and assessing whether player reaction was as anticipated.

Recommendation:

That a box be added to the “pinks” at the event of the Play Event Detail containing:

- who received the event
- when it was received
- action taken by recipient agency
- time to complete the event
- was anticipated reaction correct?
- if “loop” was closed and how this was done

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #4—Plans and Communications

Most players were not aware of, or familiar with, the BC Volcano Plan.

Recommendation:

That the Volcano Plan (or whichever plan being tested at the time) be included in the Exercise and Control Instructions.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #4 b)—Plans and Communications

Many agency plans could not be exercised nor evaluated, as they were either non-existent or very weak (standard operating procedures, financial guidelines, buildings used as EOCs).

Recommendation:

That agencies learn from Thunderbird 3, formulate/improve response plans and standard operating procedures, and choose suitable EOC buildings.

WORK ACTION:	CURRENT STATUS	ASSIGNED

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #4 c)—Plans and Communications

The vast majority of players and controllers felt telecommunications worked much better than previous exercises, and very much appreciated the work of amateur radio operators.

Recommendation:

Agree. Amateur radio staff at all participating locations to be commended for a job well done.

WORK ACTION:	CURRENT STATUS	ASSIGNED
No further action required		

Thunderbird #3
EXERCISE RECOMMENDATIONS

January 1998

Issue #4 d)—Plans and Communications

Amateur radio staff felt UHF; VHF and simplex communications needed improvement. They also felt the pace was hectic and they were quite happy with it.

Recommendation:

That amateur radio discusses technical problems and seeks solutions before the next exercise.

WORK ACTION:	CURRENT STATUS	ASSIGNED

THUNDERBIRD 3

QUESTIONNAIRE MATRIX

PART I - ALL PARTICIPANTS

QUESTION	YES	NO	COMMENTS
1. Did TB3 achieve its major and specific objectives?			
a. Major objectives: · reg emergency prep, structures, procedures, systems incl. deployed PFRC/EOCs	34	6	<ul style="list-style-type: none"> · Players didn't understand, know of, get training on: EOC/PFRC structure, purpose, operation, administrative requirements (forms, etc.). · Lack of commitment by some important players caused lapses in communications and decreased the effectiveness and training value of the exercise. · Some felt the change of structure when Logistics cells were relocated with the Agency Representatives confused players and dismantled the team; however, many thought it improved the liaison process. · Showed the need for education, practice, creation or improvement of procedures/plans now in place. · Poor communications caused PFRC to seem inactive to outside EOCs, and EOCs to be inactive as they could not take action on their unanswered requests. Players did not know if their response was effective and some outside EOCs were free-playing. · Players felt that the overall disorganized feeling was appropriate to a real situation. · If an agency does not have much to do at the PFRC, they should leave and maintain regular telephone contact with the PFRC just in case.
· reg & loc auth crisis mgt ops & consultative procedures	28	11	<ul style="list-style-type: none"> · Communications between PFRC and EOCs was not deemed effective; all centres were "doing their own thing" without much coordination up, down, among themselves (local requests not answered by PFRC, no local information from local EOCs coming up)

			<ul style="list-style-type: none"> · Roles and expectations were not clear (for jobs and structure); lack of direction within PFRC, then from PFRC to EOCs. · ESS structure and relationships within itself and to others was confusing to all players. · EOCs who either didn't play or were unrealistic negatively impacted operations. · Situations and actions were not followed up. · Personnel who were inexperienced can now be an asset in a real situation, though the exercise was perceived as too intense for first-timers. · Local authorities felt they should have agency representatives at their EOCs, and include hospitals and school/health boards for the next exercise. · PFRC needs to know EOCs' mission and objectives in order to assist them effectively.
<ul style="list-style-type: none"> · PFRC interface w. Loc auth & agency EOCs, incl telecoms, liaison & coord 	27	10	<ul style="list-style-type: none"> · Resounding frustration from the EOCs that PFRC did not communicate with them: no answers to requests, no situation reports, no information/status, slow returns on questions, very sketchy information, no acknowledgement of information sent to them, PFRC role/requirements not specified, events did not come into the EOCs, no knowledge of the declaration of state of emergency, no overall picture, etc...) · Information into the PFRC from outside not collected centrally. · Local EOCs felt their issues were taken over by PFRC at times, while some PFRC staff were concerned they had overridden their support role. · Both within and outside PFRC, access to Commander was not easy. · Within the PFRC, players were only communicating within their own teams/rooms, while outside the PFRC, EOCs were not communicating with each other. · Chilliwack and Fraser Valley Regional District should combine their EOCs.

			<ul style="list-style-type: none"> Players largely didn't know whether were communicating effectively or not, so no correction could be done.
<ul style="list-style-type: none"> PFRC/PECC interface 	10	6	<ul style="list-style-type: none"> PFRC required prompting on basic issues Problems with disseminating PECC's declaration of a state of emergency. PECC was not called to coordinate the mass evacuation. PECC amateur radio staff require scheduling improvements PFRC felt they did not get information in a timely manner in order to share with the PECC. Commander should have caused more interface with the PFRC.
<p>b. Specific Objectives:</p> <ul style="list-style-type: none"> practice staffs of PFRC & EOCs in coord overall response to major emergency 	29	7	<ul style="list-style-type: none"> Overall feeling that experience was useful, especially in pointing out weaknesses that should be followed up; exercise seen as useful and proactive. ESS and its structure was plagued by poor communications with regards to status reports and unacknowledged requests. Most players felt they were not adequately trained and did not know the expectations. This led to situations like handling events unrealistically, not carrying issues from Day 1 to Day 2, taking on problems without expertise and difficult communications. Issues could not be dealt with efficiently because the too-frequent meetings did not allow chiefs time to assimilate, plan, pass on, action, and direct their staff to support the EOCs Good brief introduction to the PFRC, but not a "real" idea of what players roles should be. PFRC needs to be exercised by itself to iron out problems of roles and responsibilities before expanding to include outside agencies/ municipalities.
<ul style="list-style-type: none"> confirm SOPs when PFRC/EOCs 	21	15	<ul style="list-style-type: none"> Generally, many organizations did not have standard operation procedures to confirm; others had only basics that

are activated			<p>they using for the first time; in a few cases (police), SOPs worked well.</p> <ul style="list-style-type: none"> · Use of ICS was very sporadic and inconsistent. · Many players, both at EOCs and PFRC were totally unfamiliar with roles, structures and procedures of the centres they were involved in. · EOCs created some confusion by wandering from original scenario. · Within the PFRC, chiefs did not track their costs and resources. · Even after Thunderbirds 1 and 2, and Canatex 2, SOPs were still not developed - they still cannot be confirmed. · Each area should have a checklist to verify “startup”, “daily”, and “close down” operations.
<ul style="list-style-type: none"> · eval prov coord & sp arrangements interfacing with loc auth structures, procedures & systems 	19	9	<ul style="list-style-type: none"> · Hard to determine if any PFRC support was required or provided. · EOCs strongly felt that PFRC did not communicate with them regarding information flow downward, finance coordination and requirements, local support available, and its inability to disseminate information. · Players overall learned that coordination and support is “easier said than done”, that weaknesses were established and evaluated, and that these problems must now be remedied. · Some questioned why the PFRC was set up outside the operational area, and why so much time was spent with outside agencies whose input would be minimal. · Some players were control staff too, so objectivity in evaluation is compromised.
<ul style="list-style-type: none"> · practice all orgs in meeting their op goals during an emergency 	27	9	<ul style="list-style-type: none"> · Players generally learned a lot about their limitations, expectations, roles and many met their goals. · Incomplete participation hampered the overall effort. · Some EOCs felt they needed a representative from each agency at the EOC itself (ambulance, police, boards, hydro, West Coast Energy) in order to be effective.

			<ul style="list-style-type: none"> Financial operations were not deemed effective as costs were not tracked nor reported, and standard operational procedures were not in place at any level. RESSOC/ESS Representatives did not communicate with each other or their PESSOC; duties, responsibilities were very confusing. Finance needs much more structure, direction and improvement.
<ul style="list-style-type: none"> famil indiv involved in planning & coord emergency response: <ul style="list-style-type: none"> in gen 	33	8	<ul style="list-style-type: none"> Majority found it a useful, valuable learning experience, as most were first-timers. Exercise showed the need for staff to be involved in operations and for planners to improve their plans. Many felt their duties/responsibilities were not clear, if they even knew what their role was. To some, the exercise was unorganized, too elaborate to handle, and too confusing to learn effectively. All agencies and personnel need to commit to training and participation.
<ul style="list-style-type: none"> with BC Volcano Response Plan 	20	12	<ul style="list-style-type: none"> Vast majority did not know of the plan, or were unfamiliar with the contents. EOCs did not use it at their level. Only good if personnel read it!
<ul style="list-style-type: none"> with org/agencies involved in emergency response 	29	6	<ul style="list-style-type: none"> Many felt it was a great opportunity to familiarize agencies who had never worked together before. General feeling that ALL agencies should play, that those who did not left a “hole” in the scenario. Many as well felt there was poor communication, no teamwork, no sharing of information and too much freelancing. There is an unfortunate level of apathy with supporting organizations.

- with coord activities reqr with other orgs, agencies, gps & indivs	29	12	<ul style="list-style-type: none"> · Players felt there were too many meetings to allow proper planing in their own cell, and that these meetings had no clear direction/guidance from leaders. · It was felt more coordination between PFRC sections was required which the leadership should have enforced. · EOC coordination is very much needed; some did not mesh and should have used mutual aid (Chilliwack and Fraser Valley RD). · Information flow and tracking was poor and could not be captured to form general situation reports. · Groups need to be closer to each other to get the big picture.
- with telecoms & eqpt nec to conduct ops	34	7	<ul style="list-style-type: none"> · It was felt amateur radio operators were better used this time, and that the exercise emphasized their importance. · Cellular contact was not realistic - bring in more hams! · Municipalities felt they had excellent cooperation from their amateur radio groups. · Players saw that some message traffic was not relayed and amateur radio were not well equipped in some localities to handle this traffic. · Amateur radio staff felt UHF/VHF should be clarified, that simplex needs improvement and that more coordination is required with utilities regarding their frequencies. · Communications tests should be done 3 times a year between municipalities and their amateur radio groups. · The District of Kent amateur radio group felt PEP frequency availability was limited. They also assessed that using their SAR group radio would not be good, as the SAR group would most likely be using it for their own missions. · The District of Kent was informed that the building they used as an EOC would be very vulnerable to power outages, and therefore would not be useful in an emergency. · PFRC players were not pleased that batteries for cellular phones were not charged before being issued - this

			delayed communications.
<ul style="list-style-type: none"> · test & refine admin, ln & telecom procedures in other than normal situ 	26	16	<ul style="list-style-type: none"> · Information should be collected at a central point before being distributed (in/out baskets required). This is especially for situation reports, requisitions, etc. · More briefing boards so situation can be seen quickly. · Messages should be stamped “info”, “action”, “copy” and use the 3-digit identification code <u>consistently</u>. · Many commented that pandemonium did not complement refinement of procedures that were for the most part non-existent. · More guidance is required on the type and importance of information that needs to flow between organizations and levels of operations. · Clerical staff should be better briefed on what is require of them. · Administration/clerical should be co-located with Logistics. · Cells of similar interests/duties should be grouped together. · Some EOCs identified that they required more telephone likes and generators - they are working on it now.
c. Additional comments on objectives			<ul style="list-style-type: none"> · Many areas overlap and cause duplication of requests, etc. · Follow up training is required if we are serious about preparedness · Work should be done with municipalities so they have input into their own objectives. · Outcome from hourly command meetings should be communicated to all players. · More portable PFRC communications equipment setup - borrowed equipment may not be available on short notice.

			<ul style="list-style-type: none"> · More lead time for local EOCs to respond allows them to practice. · Chilliwack and Fraser Valley RD should combine their EOCs · Co-locate Operations/Planning and Logistics in one room. · Should be a basic set of trained staff who go to all exercises and PFRC so they can hone their skills and improve procedures. · RESSOC and ESS Representatives should be co-located. · Distribute the Volcano Plan long enough in advance, perhaps with the Exercise Instruction. · EOCs would like an EOC package to include all forms, contacts, plans, etc. · Runners and manual typewriters are required in a PFRC. · One day is enough for some EOCs. · Control inputs should be collected at one location, and given to command for distribution and appropriate group tasking.
2. The Exercise Instruction			
a. Was it clear & concise?	29	15	<ul style="list-style-type: none"> · Many felt roles, responsibilities and expectations were not included or not clear. · Some did not get the instruction at all. · Exercise purpose and conduct were unclear. · Control staff perceived as those who measured performance. · Others felt it was a good pre-planning tool.

			<ul style="list-style-type: none"> · Some instructions referred to items not included in the instruction (communications) · Not “first-timer” friendly.
b. Did it provide sufficient info?	26	18	<ul style="list-style-type: none"> · Need identification of proper information flow, more technical information (on removal of ash, flooding considerations), more on local level roles and job descriptions. · Should be more clear overall. · Testimony of agencies with hands-on experience would be good. · Some discrepancies existed between the instruction and play events.
c. Did you receive in time?	28	12	<ul style="list-style-type: none"> · Too late to become thoroughly familiar. · Limited quantities meant books had to be passed around. · Requests for more books not answered. · December is plenty of time.
d. Additions/deletions/suggestions re Ex Instr?			<ul style="list-style-type: none"> · Clearer roles, responsibilities for players and control; include job descriptions. · Add information on lines of communications, information flow, forms to use, authority lines. · Include amateur radio in pre-exercise training days. · Inconsistencies in contents of manual were confusing. · Should include how long it takes to perform some tasks such as removing ash, etc. · Emphasis on sharing of information within/outside PFRC and EOCs, as government always requires answers/updates.
3. What was most important achievement in			<ul style="list-style-type: none"> · Majority stated they learned:

participating in exercise?	<ul style="list-style-type: none"> - the province and municipalities are not prepared for a real situation - identified weaknesses/shortcomings in own organizations' plans - how the system works - staff require training - real-time contacts identified - stress importance of planning for emergencies - hands-on experience is very valuable - better definition of specific roles is required.
4. Most disappointing aspect?	<ul style="list-style-type: none"> · Realize enormous amount of work involved in all phases of exercise. · Poor/limited/lax participation of local EOCs · Lack of communications: within PFRC, between PFRC and EOCs, and among EOCs · Roles/duties/responsibilities unclear; require guidance. · Not enough to do, especially on Day 2. · Representatives poorly/not prepared for the exercise. · Buildup to exercise not realistic - no briefing from commander or interaction with other players.
5. From a personal pt of view, was it worthwhile?	A RESOUNDING YES!!

PART II - PLAYERS ONLY

QUESTION	YES	NO	COMMENTS
1. Tempo: <ul style="list-style-type: none"> · too slow? · just right? 	10 20	18 8	<ul style="list-style-type: none"> · Quickly slowed down to a trickle, especially on Day 2 · Some would be busy if requests came their way.

· too fast?	1	26	<ul style="list-style-type: none"> · Hectic but communications staff would like more traffic. · Gave players enough time to make decision without being rushed.
2. Events realistic?	18	7	<ul style="list-style-type: none"> · Some were timely, exaggerated, unrealistic, free-played by EOCs. · Lack of understanding created unrealistic player reaction. · Weather/ash damage changes from Day 1 to Day 2 confused our plans to move personnel/materials on the ground. · Very real, could have happened. · More expert briefings required through the day.
3. Did ctrl staff insert events logically and realistically?	17	8	<ul style="list-style-type: none"> · Some were 1 day out of sync · Some just showed up out of the blue, by rumours, voice, phone, fax, runner. · Needed more on Day 2 to maintain momentum. · Probably better than a real situation would! · Please clearly mark which control (PFRC or EOC) inserts which events for the municipalities.
4. Did you receive sufficient info & advice to confidently perform duties?	13	15	<ul style="list-style-type: none"> · Many disappointed - their roles were not clear so they could not function well. · PFRC mission statement, direction, reporting directives not clear to players and local EOCs. · Control staff very helpful. · Command was not accessible, did not give direction. · Situation reports not sufficient and consistent.

			<ul style="list-style-type: none"> · Some roles not clear, and defined differently at PFRC training and on the exercise - confusing.
5. Comments/suggestions to enhance further ex & trg			<ul style="list-style-type: none"> · Events should be designed to increase ministry/agency EOC interaction, to involve all sections of PFRC and be tailored to their practice needs. · Training should include how to complete miscellaneous forms, requests, and everyone should use the same forms. · Everyone should be aware of their own roles and everyone else's both in/out of PFRC. · Ensure we all know who is/not involved in play. · Pre-training for EOC players required, and for amateurs at all levels. · Exercise should be more frequent and be mandatory for everyone, even outside agencies! · Toss up - all chiefs from PEP, then mix chiefs from all agencies. · TB2 setup worked for media because they were not isolated. · Examine and widely publish reporting requirements. · Any changes/updates in situations should to go EOCs in advisories separate from media releases. · A computer trouble-shooter should be on-site for administration staff. · The exercise should run over 24 hours. · More specific training on each position and ensure the personnel in the position has the right background.

PART III - CONTROL STAFF ONLY

QUESTION	YES	NO	COMMENTS
1. Was Ctrl Instr adequate?	8	7	<ul style="list-style-type: none"> Only to experienced control staff, not sufficient detail for first-timers on: structure, purpose, play detail, insertion, expectation, who's playing/not. Fine-tune play event so all agencies involved know "who's doing what to whom".
2. Were you given sufficient info to develop good event play?	11	3	<ul style="list-style-type: none"> Events that involved EOCs (but not inserted by them) were not reported to them. Please sort out "insertion method" versus "originator". Manual came too late for a good read-in.
3. Ctrl trg: a. Was the seminar useful?	13	4	<ul style="list-style-type: none"> Geared to experienced control staff. Simulation of insertion would help, more examples to work with (practice session). In-depth information on what's expected - too much overview. Issue phone numbers at that time so a communications check can be done with EOC control staffs.
b. Additions/deletions to future ctrl trg?			<ul style="list-style-type: none"> Instructions should be detailed for EOC Control/first-timers. Detail who is playing/not and detail everyone's structure, and that of control staff. Simulated play/demonstration for event insertion and adding spares. Determine control positions ahead of time. EDT should meet twice to refine play events, coordinate with other agencies and outline communications strategy.

<p>4. Comments/suggestions to enhance further ex & trg</p>	<ul style="list-style-type: none"> · Agencies should commit for the full 2 days and keep with the commitment (in preparation and participation). · Proper personnel should be sent, i.e., those who would attend in a real situation - not the junior inexperienced staff. · Better tracking of events by adding to the Play Event Detail a box containing: <ul style="list-style-type: none"> - who received the event - when it was received - action taken - time event completed - if anticipated reaction was correct - if “loop” was closed/how it was closed · Outside agencies should be simulated by PFRC control to better assess PFRC effectiveness. · No feedback from players on whether the events were successful and reaction was as anticipated. · More exercises, more frequently. · EOCs need EOC training like PFRC staff get PFRC training. · PFRC should respect/support EOCs and answer them back. · Better define controller roles and make them more detailed. · More PFRC training. · Players were highly motivated - they only needed guidance and direction.
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•PART 1

SUMMARY CRITIQUE

INTRODUCTION

“On January 28, 1998 at 0110 hours (PST), Mount Baker in the State of Washington was the scene of a violent volcanic eruption, the results of which affected large portions of the Fraser Valley. The eruption was accompanied by a minor earthquake and that was followed by continuous tremors; pyroclastic flows created instantaneous, high-velocity mud flows that quickly reached and flooded the Chilliwack River. Simultaneously, major mud flows proceeded through the Nooksack River system which led to severe, low-velocity, high-volume flooding in the Sumas Prairie. Four inches of wet ash were spread throughout the operational area by noon on the 28th. Dry ash from a second eruption spread over the area on the morning of Day 2.”

This abbreviated version of the scenario provided the backdrop for a two-day, large-scale volcanic response exercise called “THUNDERBIRD 3” in which the Province of BC, a number of Fraser Valley municipalities, Fraser Valley Regional District and utilities/agencies participated. The exercise ended on the afternoon of January 29, 1998.

AIM/SCOPE

The aim of Thunderbird 3 was to employ volcanic activity to exercise a Provincial Field Response Centre (PFRC) and ministry/municipal/regional district/agency Emergency Operations Centres (EOCs) in providing a coordinated response to a major volcanic eruption of Mount Baker.

The scope of the exercise was limited to the early effects of a volcanic eruption as they impacted the BC operational area defined as inclusive Matsqui/Mission on the west to Hope in the East, Kent/Harrison in the north and south along the US border.

MAJOR OBJECTIVES

These included the exercise of:

- regional emergency preparedness, procedures and plans including a deployed PFRC and the various local authority/agency EOCs/response cells;
- a fully staffed PFRC in the coordination of a major emergency through interface with local authority and agency EOCs/response cells, including telecommunications, liaison

and consultation;

- regional and local authority/agency crisis management, operations and consultative procedures; and
- PFRC/PECC (Provincial Emergency Coordination Centre) interface.

PARTICIPATION

The exercise PFRC was activated at the Old Courthouse in Langley and staffed immediately prior to the commencement of Thunderbird 3. This approach, which is consistent with all previous exercises in the series, was taken to maximize the time available for exercise event processing and problem-solving amongst the various staff components over the two-day period that was limited to working hours only. During the exercise, the PECC was represented by a simulation cell (SIMCELL) at PEP Headquarters in Victoria to coordinate activities above the PFRC level.

To assist earmarked PFRC staff in preparing themselves for their exercise assignments, a four-day PFRC Course was conducted in Langley from December 8-11, 1997.

Most provincial response-involved ministries, crown corporations, Fraser Valley local authorities, agencies (including police) and utilities participated by fully or partially activating their EOCs/response cells and providing inputs and reaction to the PFRC and PECC. Local authorities that played an active part in the exercise included municipalities and the regional district. A full list of participating organizations is included at Annex A.

OVERVIEW

A detailed critique table with recommendations and action responsibility is included at Part 2. It reflects a summary of majority opinion submitted in exercise questionnaires and post-exercise washups by participants, controllers and some observers.

Overall, Thunderbird 3 was considered a success by the vast majority of participants. The overall assessment reflected in questionnaire responses was that Thunderbird was a worthwhile, proactive and positive experience. The awareness of emergency management requirements was raised with many participants and some of the major lessons learned were:

- most organizations need to apply more emphasis on emergency preparedness;
- strengths, limitations and weaknesses in participating organizations and plans were identified;
- a realization of how the system of coordination at the regional level is supposed to function and what roles need to be addressed within EOCs to interface properly with a PFRC;

- hands-on training is extremely valuable and more is required; and
- many useful contacts were established between participating organizations/agencies which should prove valuable in any real event.

In attempting to measure overall improvement over the series of Thunderbird exercises conducted so far, an obvious limitation is that the start point for each process is close to one on a scale of ten, even considering the lead-up four-day training. By the end of the exercise, the indicator on the scale can be expected to move to approximately three out of ten. This results from a mainly new team being introduced to the PFRC and its functions. This, unfortunately, is the nature of moving these exercises from region to region. The learning curves are steep and there are definite frustrations by participants thinking that they need much more training and practice. However, it must be realized that these are designed to “familiarize” staffs and expectations need to be tempered accordingly.

Should a second exercise be held within a reasonable period of time after the first, with mainly the same staffs, the success meter would likely move into the 7 to 8 range. This estimate is born out of the experiences of Exercises Thunderbird 1 and Canatex 2, conducted in November 1993 and May 1994 respectively, in the lower mainland, whereby the PFRC staffs for both exercises consisted essentially of the same personnel undertaking the same tasks. The improvement in performance and efficiency, not unexpectedly, was dramatic. The repeat performance also affected the participation by municipalities. In Thunderbird 1, four municipalities participated while six months later, 11 municipalities took part in Canatex 2. The value of participation seemed to gain momentum once the benefits were demonstrated during the first exercise.

The above example is not necessarily intended to promote successive twin exercises, but rather to reinforce the reality that the Thunderbird series can be built on through follow-on regional exercises/table-tops to increase overall staff effectiveness. This is a far superior option compared to waiting for the next provincial-level exercise which could be years away.

Finally, Thunderbird 3 met its intent of practicing the emergency response capabilities of another region of the province. Lessons were learned and a significant legacy and start point established amongst those who would be expected to staff a PFRC in the Fraser Valley in a major emergency.

Annex A: Exercise Participation

PART 2

DETAILED CRITIQUE TABLE

PART 3

EVALUATION

BACKGROUND

Thunderbird 3 was the third in a series of provincial response coordination exercises, but the first to focus on a hazard scenario other than an earthquake. The decision to do so was based primarily on a desire expressed by the participating provincial agencies to add some variety to the exercise schedule.

The decision to focus training on response to a volcano event was somewhat problematic:

- There was in existence no provincial volcano response plan similar to the *British Columbia Earthquake Response Plan*. While it is not unreasonable to expect a “generic” response to be effective based on existing plans and procedures, the training objective of the Thunderbird exercises required “hard copy” documents from which to teach, and as a basis for evaluation of participant performance.
- The scenario of a Mount Baker eruption, though well-explained in details provided by the Geological Survey of Canada’s highly experienced vulcanologist, Dr. C. Hickson, remains a low-probability event in this century and there was a reluctance for agencies, local governments and the media to “buy into” the scenario. As a result, lacking the lower-level planning for detailed actions in a volcano scenario, there was considerable “hip-shooting” by players because they did not know what they should be doing in a given event.

The pre-exercise activity attempted to overcome these problems. A draft *British Columbia Volcano Response Plan* was produced to cater to the precise hazard scenario to be exercised, but it could not be staffed beyond the exercise participants because plan development was not an identified high priority at the inter-agency level. Therefore, detailed ministry and agency responsibilities were only broadly stated in the plan, and it is doubted that any ministry or agency developed these into probable tasks. During the pre-exercise training week, participants and controllers discussed the plan, and were familiarised with detailed volcano effects by Dr. Hickson, whose support to the entire exercise development and conduct was excellent.

Still, there were a considerable number of exercise participants who did not attend the above-noted training, and as a result their municipality, ministry or agency’s actions could not be objectively evaluated. While it is not the purpose of this evaluation to dwell on each individual event, the unpreparedness to respond in a sensible manner was certainly highlighted by the community who decided to evacuate a part of its jurisdiction and house evacuees in tents, many kilometres from the community, during a wet ashfall period. This would have been impossible to

achieve.

EVALUATION OBJECTIVES

The Evaluation Team sought to assess the usefulness of *Provincial Field Response Centre Guidance and Procedures* in a major response coordination other than an earthquake. The procedures are stated to be applicable in such an event. Secondly, the draft *Volcano Response Plan* (incomplete) was being evaluated to see if it needed to be changed prior to eventual ministry coordination and completion.

Because these objectives were not particularly onerous, the team also paid attention to two particular functions which had been consistently subjected to scrutiny in the past and which had made significant changes to their approach to their responsibilities: Communications and Emergency Social Services.

EVALUATION TEAM

The Team was less formally structured than for past exercises, and spent most of the time during the exercise coaching players to react in accordance with the noted plans and procedures.

- Chief Evaluator- David Gronbeck-Jones (PEP Headquarters)
- Evaluator- Ross McIntyre (Instructor, PEP Academy)

Ex-officio (reports were submitted to the Chief Controller and Chief Evaluator):

- Communications- Nigel Bell (Industry Canada/Communications)
- ESS- Laurie Pearce (MHR / MCF)

Evaluation points were also drawn from comments submitted by participants (elsewhere in this report) and from verbal comments at the Controllers Debrief.

“NO FAULT” EVALUATION

The evaluation points are not directed at any individual, but rather at the plans and procedures in place for a Lower Fraser Valley major emergency, organizational preparedness, and a few other significant (and unexpected) criteria which surfaced during exercise play.

OBSERVATIONS AND RECOMMENDATIONS

1. Draft *British Columbia Volcano Response Plan*

As noted in the preamble to the evaluation, this document has no formal status and was created for the exercise. While the hazard assessment within it is correct, and the general response concept is supported by regulation, there has been no inter-agency coordination of responsibilities and no subsequent development of plan detail.

If the plan is to be completed, it must be done at the level of the Inter-Agency Emergency Preparedness Council (IEPC) as was the *Earthquake Response Plan*. There is currently no plan to bring forward the matter to the IEPC.

Recommendation: PEP should table the *Volcano Response Plan* at the IEPC and recommend that it be completed and approved, commensurate with its relative importance in comparison with other plans and projects being undertaken by the IEPC.

2. PFRC *Guidance and Procedures*

Following a fourth revision prior to this exercise, it is the opinion of the Chief Evaluator that the document is suitable for the “needs of the moment”. This is stated bearing in mind that the BC Emergency Response Management System is undergoing development, and continuing government reorganization has made ministry responsibility assignments inaccurate. The document needs a “routine” updating as a result of the latter development, and may need significant change (at a future date) as a result of BCERMS deliberations.

Training. There continues to be a sharp learning curve for exercise participants who are exposed to the *PFRC Guidance and Procedures* for the first time. This is overcome through training, but some participants manage to avoid the training that is so critical to their effective performance and continued education in the Thunderbird exercises. **This is the fourth consecutive exercise evaluation in which this comment has been made.**

Recommendations: No change to *PFRC Guidance and Procedures* directly attributed to this exercise. Before the next exercise, through the IEPC, Deputy Ministers and their equivalents in Crown Corporations, and local authorities, should be advised of this recurring problem and seek their support to correct it.

3. PFRC Organizational Adjustments during exercise

In an attempt to correct perceived internal communication problems, the PFRC Commander directed a move of the Operations and Planning branches into the same room as the Agency Representatives. This did not overcome the problems (which may have been

caused by other factors).

Agency Representatives are in liaison to the PFRC as a means to coordinate support to their ministries' and agencies' regional EOCs. Although they are "captive" on-site during an exercise, in reality they would often come and go as their EOCs require them to. For some agencies, they would be semi-permanent residents as long as they needed support, but not necessarily all of them. Their real operational link to the PFRC is to the Commander. The PFRC staff coordinates operational and logistical requirements of agencies on the Commander's behalf. Other matters are coordinated agency-to-agency, and *may* result in an interface at the PFRC.

The PFRC is structured into functional components based on what needs to be done, not where the components are physically located in a building. Inter-relationships, even those made difficult by walls in a building, are what need to be improved and practised in an exercise. If anything should have been moved into the Agency Liaison room, it should have been the Command Staff, but even that is not necessary to achieve effective Agency-PFRC communication and coordination.

In a real emergency PFRC activation, the physical arrangement of branches develops as the PFRC grows in size. From a start where all participants number only a few persons and can probably sit around a single table, the logical placement in different rooms (if necessary) evolves from actual needs. For an exercise, this process is eliminated, and a full staff starts the exercise already in compartments by branches. To focus on procedures and to get training value from the exercise events, the start-state physical layout should be left alone.

Recommendation: Training for future exercises should emphasise that the physical layout of a PFRC is not the over-riding concern. This becomes self-evident when the activation/mobilization scenario is brought into play.

4. Electronic Communications

There was a major improvement to the functioning of electronic communications in this exercise. The amateur radio operators performed extremely well, and there were several other non-telephonic communications resources in operation which worked well. Because this was an exercise, there was plenty of time to establish and test radio paths, etc. This is not a criticism, but the point is made because in this and other exercises held to date the availability of a building has been the prime consideration for the location of the PFRC.

Recommendation: Consideration should be given to exercising (regionally) the rapid set-up capability that would be required of PFRC communications in a real emergency. Emergency personnel (other than communications) should also recognise that in a real emergency the siting of a PFRC may be constrained by the need to communicate by radio both locally and back to Victoria. Selection of potential PFRC sites should, therefore, be done in conjunction with communicators.

5. Emergency Social Services

This was the first Thunderbird exercise in which ESS operated a regional EOC (the RESSOC), which was located in the same building as the PFRC. This was a late decision to do so, and there was some confusion about it amongst the ESS players and other players as well. The ESS evaluations dwelled on these matters and will lead to changes within the ESS organization that will solidify the RESSOC concept.

The Provincial Emergency Social Services Operations Centre (PESSOC) participated in this exercise as well, as part of ESS-only exercise objectives that were well beyond the scope of Thunderbird exercise play. This also caused confusion amongst players who did not recognise the organization as a higher-level functional resource of ESS without any operational link to a PFRC (it would link to ESS central headquarters and the PECC in Victoria).

It is the Chief Evaluator's opinion that the participation of the PESSOC in Thunderbird exercises as they are currently conducted is detrimental to the exercise objectives because:

- a. The PESSOC is not a regional resource. PESSOC roles and reactions cannot be exercised properly without the provincial central coordination level being introduced.
- b. The PESSOC roles and composition do not change, whereas each Thunderbird trains a new regional team. The experience differential between the PESSOC and PFRC is overwhelming to first-time players at the PFRC, and they have little concept of what the PESSOC is intended to do. Bad lessons are learned as a result.

Recommendation: That the PESSOC not be exercised in conjunction with the PFRC level. If PESSOC-like input is needed for a RESSOC to be effective, then it should be a control input that is collectively reviewed and agreed to by the Thunderbird Exercise Control team.

6. Other Evaluation Points, from Players and Controllers

The Chief Evaluator agrees with these comments, in general, however they did not represent overwhelming faults and were raised by only a few participants.

- a. The development of standard forms and associated financial procedures under the BCERMS should be accelerated so that they are available for the next Thunderbird exercise.
- b. Communication (passage of information) needed to be improved between all components.
- c. Some requirements were beyond the abilities of the players to achieve. This was in

- particular reference to the direction to the PFRC (from the PECC) to prepare a contingency plan for the orderly evacuation of a large portion of the population out of the danger area.
- d. Some felt the need for more procedures and checklists to be developed at agencies, municipal EOCs, and at the PFRC (notably in the Finance and Administration Branch).
 - e. Too many staff meetings. No time left to do any work.

CONCLUSIONS

Despite the frustrations expressed by some in realising that the same comments arise nearly every exercise, it must be remembered that each exercise has nearly all-new players, is in a new locality, and involves EOCs in a provincial exercise for the first time. They are not serious problems, and in learning what a problem has been, the participants can see for themselves how to remedy the problem. Lessons have been taught in a valid way. There is not enough time to practice every player in writing a clear message in the classroom environment, but she will learn quickly “on the job” when requests get lost and/or go unanswered.

It was resoundingly voiced by the participants, and the Chief Evaluator agrees, that the exercise was very worthwhile and quite likely the most successful yet. Those who did not avail themselves of the training provided or even read the *PFRC Guidance and Procedures* and other documents provided, must certainly have wondered just what was going on for the better part of two days.

EXERCISE THUNDERBIRD 3 PARTICIPATION

The following ministries/agencies/local authorities/organizations participated in Exercise Thunderbird 3 either directly or indirectly, January 28-29, 1998.

Provincial Emergency Coordination Centre – Victoria (simulation only)

Provincial Field Response Centre – Old Courthouse – Langley

Ministries of: Attorney General

Forests

Transportation and Highways

*Human Resources – ESS (including Non-Governmental
Organizations and volunteers)*

Environment, Lands, Parks

Agriculture, Fisheries and Food

Finance and Corporate Relations

BC Ambulance Service

Justice Institute (PEP Academy)

BC Ferry Corporation (simulation only)

BC Hydro and Power Authority

BC Gas

BC Telephone Company

BC Transit (simulation only)

BC Buildings Corporation

Fraser Valley Regional District (including Abbotsford and Chilliwack)

District of Kent/Agassiz

District of Maple Ridge

District of Hope
District of Mission
City and District of Langley
Abbotsford Airport (simulation only)
Fraser Valley Health Unit
Fraser Valley Coroner
"E" Division, RCMP
West Coast Energy
CN Rail (simulation only)
Emergency Preparedness Canada (BC/Yukon Region)
General Support Forces (Pacific)
Provincial Emergency Program