



Asia-Pacific  
Economic Cooperation

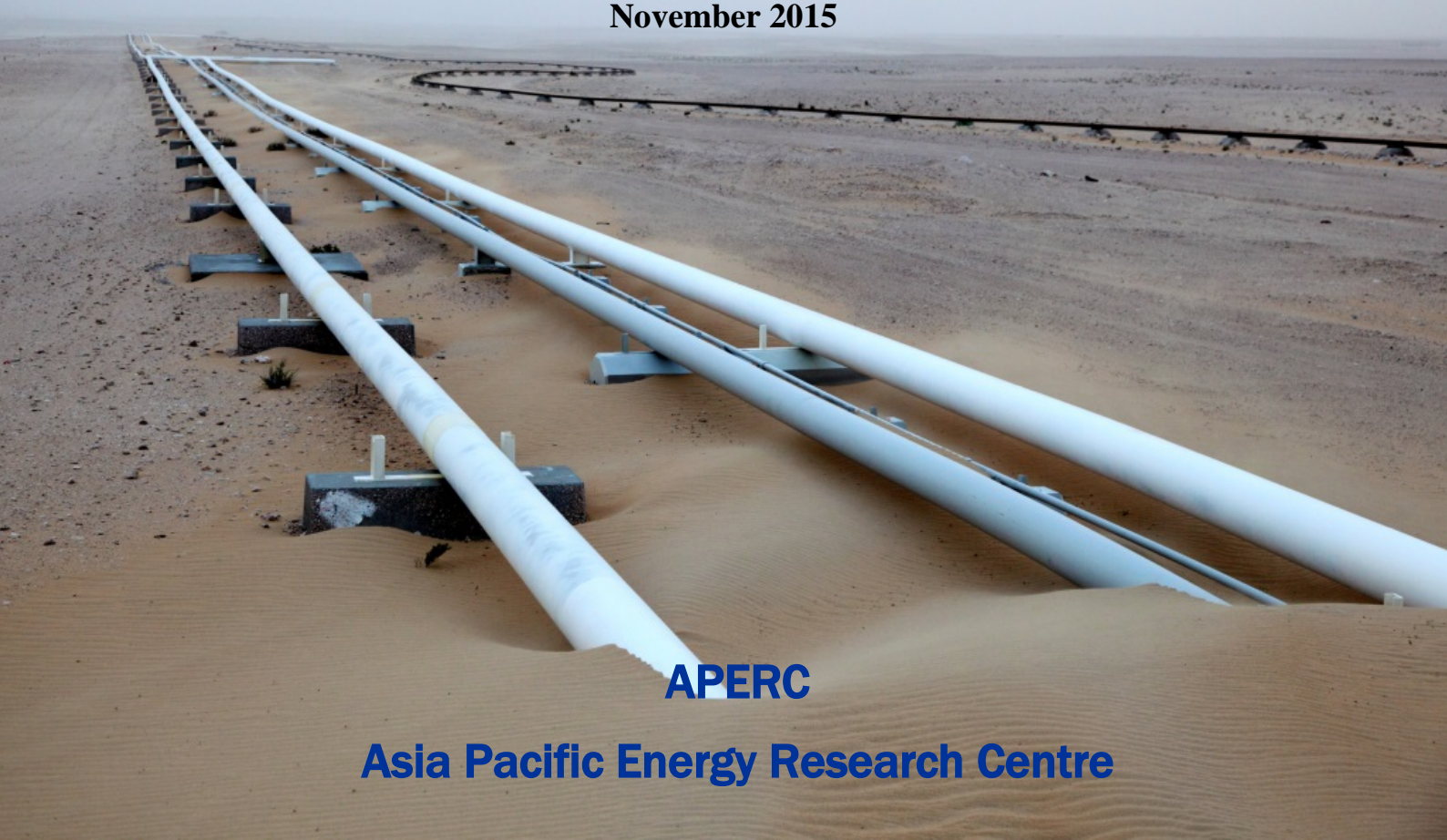
# APEC OIL AND GAS SECURITY EXERCISE MODEL PROCEDURE



*A Step-by-Step  
Approach for  
Planning, Conducting and  
Evaluating Emergency Exercises*

**First Edition**

November 2015



**APERC**

**Asia Pacific Energy Research Centre**

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## Foreword

Energy security has been an ongoing concern, not only in the Asia-Pacific Economic Cooperation (APEC) region but in the global community as well. With the anticipated economic improvements of certain economies in the region—specifically, the developing ones—energy demand is expected to soar, which will necessitate additional supply to meet domestic and regional energy requirements. All economies remain dependent on oil for the transport sector, while gas has been gaining a substantial share in the energy supply mix of most economies in the region.

Given this landscape, enhancing energy supply security—especially for oil and gas—requires serious attention and concerted action in several aspects amid the environmental and political uncertainties (e.g., climate change and energy price volatility) that pose challenges for each economy. As such, improving responses to oil and gas supply disruptions should be treated with the utmost importance in order to make the region and economies resilient to potential energy supply threats that could derail economic growth. Recognizing this urgency, the APEC Energy Ministers' Meeting (EMM10) in Saint Petersburg, Russia, in June 2012 instructed the Energy Working Group (EWG) and the Asia-Pacific Energy Research Centre (APERC) to conduct emergency response workshops and exercises.

To enact this directive from the APEC Energy Ministers, APERC conducted two oil and gas security exercises in collaboration with other regional and international organizations. The first exercise was the “Joint Southeast Asian Exercise” held in Bangkok, Thailand, in September 2013. This was followed by the “Oil and Gas Security Exercises: Indonesia Exercise” in Jakarta, Indonesia, in October 2013.

Recognizing the significance of sustaining the security exercise, as once again emphasized at EMM11 in Beijing, China, in September 2014, APERC initiated and formulated the Oil and Gas Security-Exercise Model Procedure (OGS-EMP). The OGS-EMP will serve as a guidebook for member economies to conduct their respective supply emergency exercises. The OGS-EMP provides a step-by-step approach for developing and implementing supply emergency exercises. This approach was developed based on APERC's experiences conducting the two aforementioned security exercises and the approaches recommended by the International Organization for Standardization's (ISO) Standard on Societal Security—Guidelines for Exercises (ISO 22398:2013), as well as other exercise guidelines from other organizations or associations.

I hope this document will provide the necessary guidance for each APEC economy to initiate and conduct security exercises as a part of improving their performance and capacity to respond to oil and gas supply disruptions.

Takato Ojimi

The President of APERC



## Acknowledgments

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## 1. Introduction

Energy security is a precondition for sustaining economic and social development in the APEC region. Given the dominance of fossil energy in the APEC economies' energy supply mix, as well as the importance of oil in fueling economic growth, oil supply security has received significant attention. Gas has also been a focus of supply security since its share in the energy portfolio has significantly increased in some economies. Thus, it is a crucial task of the APERC to identify ways to help economies become well prepared to deal with potential energy supply shocks and disruptions.

In consideration of the importance of improving responses to oil and gas disruptions, the APEC Energy Ministers (EMM10) gave a clear directive to the Energy Working Group (EWG) and APERC as follows:

*We encourage the EWG and APERC to work in collaboration with the International Energy Agency (IEA) and the Association of Southeast Asian Nations (ASEAN) on activities to improve the response to oil and gas emergency situations in the APEC region, including emergency response workshops and exercises.*

In response to this directive, APERC conducted two oil and gas security exercises in 2013.

At EMM11 in Beijing, China, in 2014, the APEC Energy Ministers gave further instructions to strengthen capacities and systems for oil and gas emergency response in the APEC economies, as stated below:

*We encourage APEC member economies to improve capacity building in oil and gas emergency response, including strengthening their own systems such as oil and gas stockpiles and supply chains that suit their own circumstances. We instruct the EWG, including through APERC, to continue cooperation on emergency response, with the International Energy Agency (IEA), ASEAN, the Economic Research Institute for ASEAN and East Asia (ERIA) and other international organizations. We also encourage member economies to conduct oil and gas security exercises on a voluntary basis, establish an APEC oil and gas security framework and do research on oil and gas security, so as to improve the capacity of the APEC region to respond to emergencies such as disruptions in oil and gas supply.*

Based on this instruction, APERC has drafted the OGS-EMP, a step-by-step approach for oil and gas emergency exercises, to promote and guide economies in developing and implementing emergency exercises.

Dependence on oil and gas imported from other regions—some of which are affected in varying degrees by political crises/conflicts—could result in energy supply disruptions. Other potential threats include natural disasters stemming from extreme weather events associated with climate change (e.g., typhoons, flooding) or geographic conditions (e.g., earthquakes, volcanic eruptions), terrorism (e.g., bombings, cyber attacks), sociocultural instability (e.g., labor issues, social unrest, sabotage) and accidents in the supply chain (e.g., fires, leakages). A disruption in the oil or gas supply could have a serious economic impact on all sectors using oil or gas (e.g., transport, electricity and industry) if there is no mechanism in place for short-term management.

The aforementioned threats/hazards need to be anticipated by APEC economies in their oil and gas emergency response plans, which are strongly recommended to be established by APEC economies. The aims of emergency response plan are to prepare for and mitigate the impacts of an emergency through establishment an organizational structure and procedure in



coping with the emergency situation. The readiness, performance and capacity of the system (e.g., policies, plans, procedures and communication protocols), including personnel, must be continually strengthened to ensure the effective implementation of measures and response/recovery strategies during actual emergencies under the emergency response plan. Conducting exercises for oil and gas disruptions is important to achieving the best performance and capacity of systems and personnel.

ISO 22398:2013 notes that conducting exercises is a critical tool for identifying gaps and areas where improvement is necessary. Specifically, exercises can determine the effectiveness of response and recovery strategies for oil and gas supply disruptions and measure the competence of the organization and its personnel. In addition, exercises are excellent tools for evaluating existing plans and programs for possible revision and enhancement, thereby ensuring completeness, relevancy and accuracy in coping with oil and gas supply disruptions.

Exercises can be used for the following:

- Validating and testing the system covering the oil and gas fields (e.g., policies, plans, procedures, institutional structures, information and communication technologies)
- Clarifying and Training personnel regarding their roles and responsibilities to improve individual performance and capacity in dealing with oil and gas supply disruptions
- Improving institutional frameworks for better inter-organizational coordination and communication in dealing with oil and gas supply disruptions
- Identifying gaps in resources to effectively dispense measures/programs when addressing supply disruptions
- Identifying opportunities to improve the system and personnel
- Using improvisation to find the best solution and strategy to cope with oil and gas supply disruptions

## **2. Purpose and Scope**

The OGS-EMP provides basic information for developing and implementing (planning, conducting and evaluating) an efficient and effective exercise program and/or exercise project.

The guidebook broadly follows the approaches recommended in the International Organization for Standardization's (ISO) Standard on Societal Security—Guidelines for Exercises (ISO 22398:2013). The ISO's guidelines are applicable to all organizations, regardless of type, size or nature, whether private or public. However, this document makes some modifications in order to be easily perceived and understood by policymakers and government organizations. The OGS-EMP consists of four basic elements:

1. Elements that need to be considered
2. Exercise program
3. Exercise project
4. Alternative emergency response measures

It is strongly recommended that policymakers or government organizations sensibly implement the approaches described here by taking into account existing standards and

procedures for handling disruptions in oil and gas supplies. These approaches may be modified to suit the conditions and requirements of each economy.

The OGS-EMP is intended for use by a member economy or government who has a plan to develop and implement an exercise program and/or exercise project, particularly in oil and gas.

### 3. Terms and Definitions

The terms and definitions presented below are based on ISO 22398:2013 and other sources.

- **Capacity** refers to the quantity, ability and suitability of tasks or outputs that can be produced to respond to something.
- **Competence** is the demonstrated ability to apply knowledge and skills to achieve intended results.
- **Exercise** is the process used to train for, assess, practice and improve performance and capacity in an organization.
- **Exercise Coordinator** is the person responsible for planning, conducting and evaluating exercise activities.
- **Exercise Controller** is the person responsible for planning and managing exercise play in an operations-based exercise.
- **Exercise Evaluator** is the person responsible for measuring and assessing the performance and capacity of the system and personnel during the exercise; this includes identifying unresolved issues and analyzing exercise results.
- **Exercise Plan or Guidebook** is the document that provides general information or an overview of the exercise to help participants understand their roles and responsibilities in the activity.
- **Exercise Program** refers to the series of exercise activities designed to meet an overall objective or goal.
- **Exercise Program Manager** is the person responsible for planning and improving the exercise program.
- **Exercise Project Team** refers to a group of people involved in planning, conducting and evaluating an exercise project.
- **Final Exercise Report** is the document that records, describes and analyzes the exercise, drawing on debriefs and reports from observers, and derives lessons from it.
- **Government Organization** refers to a government body or semi-body that manages an energy crisis or emergency (acting as the National Emergency Strategic Organization-NESO), or trains personnel (these functions may vary from economy to economy).
- **Interested Party** can refer to an organization or person that can affect, be affected by or believe itself/himself/herself affected by a decision or activity.
- **Management** refers to the one in-charge of coordinating activities and directing and controlling an organization.

- **Master Scenario Events List** is a detailed list of events that are scheduled to occur during the exercise.
- **Observer** refers to an exercise participant who witnesses the exercise while remaining separate from the exercise activities.
- **Participant** refers to a person or organization who performs a function related to an exercise.
- **Performance** refers to the action or process of performing a task or function.
- **Personnel** are people employed by an organization or engaged in an organized undertaking, especially in an energy crisis or emergency.
- **Script** refers to the story of the exercise as it develops; it allows directing staff to understand how events should develop during exercise play as the various elements of the master scenario events list are introduced.
- **System** refers to a set of things created to carry out a specific activity, perform a duty or solve a problem; such things can include policies, plans, procedures, protocols, technologies, machines and equipment, among others.
- **Target group** refers to individuals or organizations subject to the exercise.

## 4. Elements that Need to be Considered

Before the exercise program or project can be developed and implemented by the economy or government organization, there several elements that need to be considered:

1. Analyzing needs
2. Obtaining commitment and support from top management
3. Establishing the exercise organization
4. Securing the budget
5. Handling confidential data and information

In addition, it is necessary that the economy or government organization should have emergency response plan in oil and gas beforehand before developing and implementing the exercise program or project to ensure the effective implementation of measures and response/recovery strategies during the exercise can be useful to improve and strengthen the existing emergency response plan. However, if not, the effective implementation of measures and response/recovery strategies during the exercise activities can be useful to establish the emergency response plan, later.

### 4.1. Analyzing Needs

The purpose of analyzing needs is to determine the objective of an exercise program or project. Through this process, issues related to the existing performance and capacity of the system and personnel will be revealed. Thus, the ideas and plans related to developing and implementing an appropriate exercise program or project that require improvements can be identified and acted upon.

The findings of the needs analysis can also be used to determine the objectives or scope of the exercise program or project. Moreover, based on the findings, the perceived importance of developing and implementing the exercise program or project can be used to garner support from other relevant organizations. **Table 1** shows a simple set of steps for identifying needs.

**Table 1. Steps for Identifying Needs for an Exercise Program or Exercise Project**

Step 1	Review your current economy's or government organization's emergency management condition (system and personnel).
Step 2	Examine the performance and capacity of the system and personnel (past and current).
Step 3	Identify the performance and capacity of the system and personnel (e.g., strengths and weaknesses, gaps, conflicting policies, vague procedures or standards).
Step 4	Determine needs based on the findings of steps 2 and 3 by answering the following questions: <ul style="list-style-type: none"> <li>• Why should the economy or government organization undertake this program/project?</li> <li>• What problem or opportunity will the program/project address?</li> <li>• Why is it important?</li> </ul>

*Source: IOC Manuals and Guides 58, with some modification*

The needs of an exercise program or project in oil and gas supply security should cover the following issues (if they exist):

- Primary and secondary hazards that the economy/organization faces
- Impact of emergency conditions on the economy or other sectors
- Checking decision-making processes
- Validating the roles and responsibilities of personnel
- Evaluating coordination, communication and cooperation with other organizations
- Testing systems (e.g., policies, plans, procedures, equipment)
- Evaluating short-, medium- and long-term mitigation actions on the supply side
- Evaluating short-, medium- and long-term mitigation actions on the demand side
- Checking the mechanisms for collecting data and information when emergency conditions occur, as well as monitoring
- Revealing the strengths and weaknesses of the system and personnel
- Identifying what needs to be done to improve mitigation actions and address weaknesses in the system and personnel
- Handling communication with the public

## **4.2. Obtaining Commitment and Support from Top Management**

One of the success factors in developing and implementing an exercise program or project is getting commitment and support from the top management of the economy, government organization or other relevant organization(s). Such support is needed to ensure that the purpose and scope of the project accord with the economy's or government organization's policy and strategic objectives. Support from the government or organization is also needed to secure budgets, assign roles and responsibilities to staff, and obtain data and information related to the exercise activity. The most important aspect, however, is the commitment to follow the recommendations of the final exercise report to improve the ability of the system and personnel to manage oil and gas supply disruptions.

There is also a need for commitment and support from other relevant organizations. Other organizations and their staff could be part of the target groups, members of the exercise project team, participants or members of interest groups. If the exercise program or project will be conducted in collaboration with other relevant organizations, commitment and support should be secured in advance from the top management of those organizations.

The benefits and advantages of the exercise program or project, the consequences and risks, and the support needed to carry out the program or project should be clearly explained and presented to the top management and to those who are responsible for an exercise. The progress made on implementing the program or project should be reported periodically by the exercise program manager.

## **4.3. Establishing the Exercise Organization**

To develop and implement the exercise program or project, the economy or the government organization needs to establish an exercise organization. The purpose of this organization is to effectively organize, manage and control the activities, development and implementation of the exercise program or project. The structure of the exercise organization should be determined based on the needs, size and complexity of the exercise. However, it should be manageable in size and operate in an efficient, effective manner. *Figure 1* shows a sample structure for an exercise organization. The structure can be simplified for small and simple exercise activities.

The economy or government organization needs to select competent staff/personnel for the roles of exercise program manager, exercise project team leader and exercise project team. The exercise program manager should have competency and experience in exercise program management or project management and be able to devote time to leading the exercise program. Similarly, the exercise project team leader (appointed by the exercise program manager) should possess competency and experience in oil and gas, emergency management, and safety and security systems. In some cases, the exercise project team leader can also become the exercise facilitator or coordinator.

The exercise project team may consist of several sub-teams, such as a planning team, logistics team, administration/finance team or other team (if needed). The number of members in the exercise project team can be determined based on the method, type and scope of the exercise and the complexity of the exercise, representing the full range of participating relevant organizations. However, the team should also be of a manageable size.

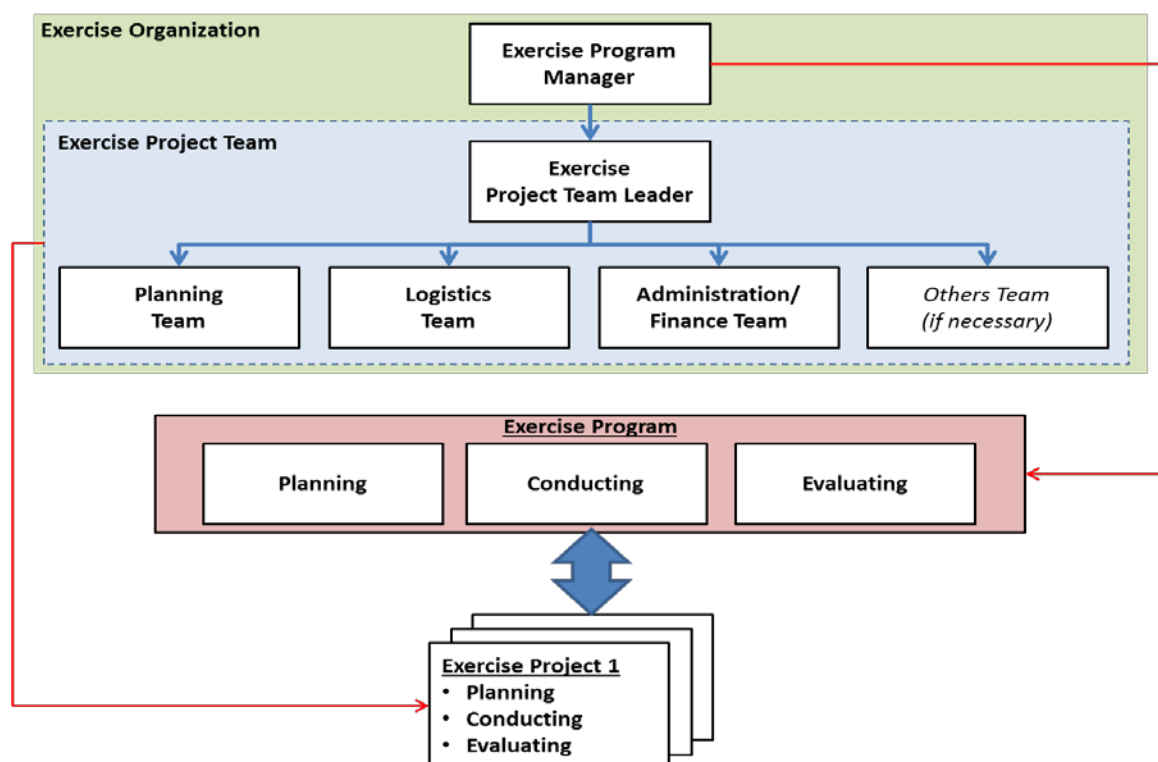
Among the sub-teams of the exercise project team, the planning team plays a crucial role in planning, conducting and evaluating the exercise activity. The responsibilities of the planning team include, but are not limited to, the following:

- Refining the concept design of the exercise
- Creating the scenario
- Developing an exercise plan/guidebook and the master scenario events list
- Developing simulation and evaluation control

With its high level of responsibility, the planning team is entrusted with not revealing details of the scenario to players prior to the actual exercise. Team members must have competency and experience in oil and gas, emergency management, and safety and security systems, and should be able to dedicate time to developing and executing the exercise. The number of members will depend on the scope and complexity of the exercise. If needed, foreign experts—particularly from APEC economies and regional or international energy organizations (e.g., the International Energy Agency [IEA])—may be part of the planning team provided they have experience with oil and gas disruptions or conducting oil and gas security exercises.

Members of the planning team are also excellent candidates for the roles of exercise facilitator, coordinator, controller or evaluator during the exercise activity. However, the planning team member who is assigned as evaluator should not be assigned other duties.

Figure 1. The Exercise Organization



Source: ISO 22398:2013, with modifications

#### 4.4. Securing the Budget

The budget for the exercise program or project needs to be prepared before initiating the activity. It must be ensured and allocated in advance. The amount that needs to be allocated will depend on many factors, including the length of time devoted to planning the exercise program (e.g., one year or three years); the method and type of the exercise (e.g., seminar, workshop, tabletop, drill, functional or full scale); the number of exercise projects to be conducted (e.g., one or two); timing, duration and location; and the number of participants. As stated in ISO 22398:2013, the budget for the exercise program or project is based on an analysis of the appropriate exercise type and method required to achieve the objectives of the exercise. This analysis should consider staffing, systems, tools and participating interested parties, as well as other costs involved in the exercise.

The budget will cover the following: staffing, including possibly hiring experts; equipment (e.g., computers, projectors, telephones, other communications); preparing facilities (e.g., venues, accommodations, transportation, parking), services (e.g., catering, medical support, site security, photography, video for showing scenarios); producing documents (e.g., exercise plan/guidebook, master scenario events list, final report); and meetings and other briefing arrangements.

In a joint exercise program or project, the sharing of costs can be considered. In this case, commitments and support need to be obtained in advance from the top management among the organizations.

#### 4.5. Handling Confidential Data and Information

Due to security issues, oil and gas data and information resources could be one of sensitive areas that need to be well managed by the economy or government organization in the exercise program or project.

However, the economy or government organization must realize that without reliable data and information, the exercise scenarios that need to be developed might not accurately represent real emergency conditions. Moreover, without such reliable data and information, the responses to the scenarios created by the participants will not be maximized. As a result, the objectives of the exercise program or project might not be achieved.

To address this issue, the economy or government organization can consider the following:

- Establish a “Confidentiality Clause”

A confidentiality clause can be added to the exercise plan/guidebook and the documents related to the master scenario events list. To maintain the confidentiality of information used in the exercise, the clause will apply to all individuals who are involved in the exercise program or project and participate in the exercise activity (exercise program manager, exercise coordinators, exercise project teams, interested parties, observers, participants and target groups). *Figure 2* shows an example of a confidentiality clause.

*Figure 2. Example of a Confidentiality Clause*

**Confidentiality Clause:**

**These data and information are confidential, are being given solely for your information and for your use during the exercise and it may not be copied, reproduced or redistributed to any other person in any manner. Thus all participants must maintain confidentiality of data and information which were obtained in the exercise.**

- Request to “Return all Materials Containing Confidential Data and Information”

The economy or government organization may ask all individuals who were involved in the exercise program or project and participated in the exercise activity to return all materials containing confidential data and information once the activity is completed.

- Use “Non-Real Names or Generic Names”

The scenarios that will be constructed and presented can use non-real names or generic names for oil and gas facilities, infrastructure services, and locations.

The economy or government organization may need to instruct the exercise program manager and exercise project team leader to maintain the confidentiality of oil and gas data and information during the development and implementation of the exercise program or project. This clause needs to be clearly written in the exercise plan/guidebook and the master scenario list of events and documents. It should also be communicated verbally to all individuals involved in the exercise before the start of the activity (during exercise briefings).

*Table 2. Steps to be Undertaken When Deciding to Start Exercise Program or Project Development and Implementation*

<i>Analyze Needs</i>	<p><b>How?</b></p> <ol style="list-style-type: none"> <li>1) Review your current emergency management condition in terms of both the system and personnel.</li> <li>2) Examine the past and present performance and capacity of the system and personnel.</li> <li>3) Identify the performance and capacity of the system and personnel, including strengths and weaknesses, gaps, conflicting policies, and vague procedures or standards.</li> <li>4) Determine needs based on the findings from steps 2 and 3 by answering the following questions:             <ul style="list-style-type: none"> <li>○ Why should the economy or government organization undertake this program/project?</li> <li>○ What problem or opportunity will the program/project address?</li> <li>○ Why is it important?</li> </ul> </li> </ol>
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<p><b><i>Obtain Commitment and Support from Top Management</i></b></p>	<p><b>Who?</b></p> <ul style="list-style-type: none"> <li>▪ The economy or government organization</li> <li>▪ Those who are responsible for an exercise</li> <li>▪ Other relevant organization(s)</li> </ul> <p><b>How?</b></p> <ul style="list-style-type: none"> <li>▪ Clearly explain and present the benefits and advantages, consequences and risks, and required supports of the exercise program or project.</li> <li>▪ Periodically report on the progress of implementing the program/project.</li> </ul>
<p><b><i>Establish the Exercise Organization</i></b></p>	<p><b>How?</b></p> <ul style="list-style-type: none"> <li>▪ The exercise program manager must be chosen from staff members who have competency and experience in exercise program management or project management and able to dedicate time to leading the exercise program.</li> <li>▪ The exercise project team leader must be chosen from staff members who have competency and experience in oil and gas, emergency management, and safety and security systems, and be able to dedicate time to leading the exercise project team.</li> <li>▪ Members of the planning team should be chosen from the roster of staff who have competency and experience in oil and gas, emergency management, and safety and security systems, and they must be able to dedicate time to being members of the planning team.</li> <li>▪ The planning team may include foreign experts, especially those from APEC economies and from regional or international energy organizations who have competency and experience dealing with oil and gas disruptions or conducting oil and gas security exercises.</li> <li>▪ The roles of exercise facilitator, coordinator, controller and evaluator may be assigned to members of the planning team.</li> <li>▪ The exercise project team may consist of the planning team, logistics team, administration/finance team and others as needed; however, the number of members must be of a manageable size:             <ul style="list-style-type: none"> <li>○ Determined based on the type, scope, size and complexity of the exercise</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Represents the full range of participating relevant organizations</li> </ul>
<b><i>Secure Budget</i></b>	<p>How?</p> <ul style="list-style-type: none"> <li>▪ Allocated based on an analysis of the exercise method and type needed to achieve the exercise performance objectives.</li> <li>▪ In the case of a joint exercise program or project, cost sharing with other organizations can be planned.</li> </ul>
<b><i>Manage Confidential Data and Information</i></b>	<p>How?</p> <ul style="list-style-type: none"> <li>▪ Establish a “Confidentiality Clause.”</li> <li>▪ Make a request to “Return all Materials Containing Confidential Data and Information.”</li> <li>▪ Use “Non-Real Names or Generic Names.”</li> </ul>

## 5. Exercise Program

Even though the exercise project may be developed and implemented separately from the exercise program, it is fully recommended that the economy or government organization should establish an exercise program. Through an exercise program, a series of exercise activities for improving the performance and capacity of the system and personnel to cope with oil and gas supply disruptions can be coordinated and integrated with a training program to meet the needs, strategic objectives and strategies of the economy or government organization.

Overall, developing and implementing an exercise program consists of three steps: (1) Planning, (2) Conducting and (3) Evaluating (see [Figure 3](#)).

### 5.1. Planning (Step 1)

In planning the exercise program (Step 1), the economy or government organization should do the following:

- Analyze needs
- Obtain commitment and support from top management
- Secure the budget
- Establish the exercise organization
- Manage confidential data and information
- Establish the objectives of the exercise program

Detailed information about analyzing needs, obtaining commitment and support from top management, securing the budget, establishing the exercise organization, and managing

confidential data and information were discussed above (“Elements that Need to be Considered”).

▪ **Establish the Exercise Organization**

In establishing the exercise organization, the economy or government organization should assign a competent staff member as the exercise program manager. Clear roles and responsibilities for the exercise program manager should be determined by the top management based on the needs analysis of the exercise program, as well as the strategic objectives and strategies of the economy or government organization.

Some of the roles and responsibilities of the exercise program manager include the following:

- Develop the objectives of the oil and gas exercise program, as well as the objectives and scope of the individual exercise project, to meet the needs, strategic objectives and strategies of the economy or government organization
- Develop communication with the top management of the economy, government organization or other relevant organizations, to get their commitment and support
- Establish the exercise project team and assign a competent staff member to the role of exercise project team leader
- Ensure the provision of necessary resources and logistics to support the activities of the exercise project team
- Approve products developed by the exercise project team (e.g., concept of exercise, timeline and schedule, scenario, exercise documents)
- Monitor and supervise the activities of the exercise project team based on the timeline and schedule
- Periodically report on the progress of implementing the program or project to top management
- Submit the exercise report to the top management

▪ **Establish the Exercise Program Objectives**

The exercise program objectives explain what you propose to do to solve a problem or meet an opportunity. This can be determined based on:

- The findings of the needs analysis
- The economy or government organization that oversees the priorities of the emergency preparedness program
- Risks to the economy or government organization
- Actual incidents from the past related to oil and gas supply

## **5.2. Conducting (Step 2)**

Conducting the exercise program in oil and gas supply (Step 2) consists of several activities that need to be carried out by the exercise program manager. These activities can include:

- Establishing the management of the exercise project team
- Establishing communication
- Establishing the timeline and schedule of the exercise program
- Providing support and assistance for the activities of the exercise project team

### **▪ Establishing the Management of the Exercise Project Team**

The exercise program manager should establish the exercise project team by selecting the staff/members who have competency and experience in the oil and gas fields, emergency management, and safety and security systems, and are able to devote time to the exercise project team. The most competent and experienced person among the exercise project team members should be assigned as the exercise project team leader.

The exercise project team may consist of several teams, including a planning team, a logistics team, an administration/finance team or other teams as needed. The number of members on the exercise project team can be determined based on the type and scope of the exercise and the complexity of the exercise, and should represent the full range of relevant participating organizations. However, it must be efficient, effective and manageable in size.

The planning team plays a pivotal role in the exercise project team. It is responsible for planning, conducting and evaluating the exercise activity. The exercise program manager should assign members of the planning team to the roles of exercise facilitator, controller and evaluator during the exercise activity.

The logistics team provides the supplies, materials, facilities and services needed to make the exercise activity run smoothly. Meanwhile, the administration/finance team provides financial services arrangements for the development and implementation of the exercise project. This team also provides administrative information on the exercise project for the participants and planning team members, especially if there are experts from abroad, and handles the registration process.

### **▪ Establishing Communication**

A key factor for the successful implementation of an oil and gas exercise is the establishment of good communication between the actors involved in the exercise. By using the best communication methods, messages can be delivered in a way that is clear and unambiguous, thereby producing good, timely responses from the target audiences or recipients.

The exercise program manager should establish internal and external communication methods as part of the coordination activity. These methods are also used to get commitment and support from the top management of the economy, government organization or other relevant organization(s). Such communication is essential if the organizations or staff are part

of the target groups, members of the exercise project team, participants or interest groups. In such cases, the exercise program manager should clearly explain and present the benefits and advantages, consequences and risks, and required supports of the exercise program or project using the best communication methods.

Some methods that can be utilized for internal and external communication include:

- Face-to-face conversation (e.g., meetings and presentations)
- Written communication (e.g., reports, memos, presentation materials)
- Oral communication (e.g., phone conversations)
- Online communication (e.g., internal e-mails and intranet)

Face-to-face conversation and oral communication can be used to clarify issues through detailed discussion. Written communication can provide clear statements regarding discussions and their outcomes, and can be recorded and filed. Online communication provides a fast, cheap, efficient means of interaction that can be easily be stored. Online communication is also useful when the target audience or recipient is located far away (e.g., the participants or experts are located overseas).

#### ▪ **Establishing the Timeline and Schedule of the Exercise Program**

The timeline and schedule of the program show the details regarding how the proposed exercise activities will be carried out (who, what, where, when, how). A realistic timeline and schedule should be defined by the exercise program manager or exercise project team leader based on the following:

- Minimum negative effect on the organization's routines and operations, especially if the exercise activity will be conducted in oil/gas facilities
- Time taken (daytime or nighttime)
- Holiday schedules
- Weather and other seasonal considerations

Once a realistic timeline and schedule has been approved, the exercise program manager should monitor the activities of the exercise project team to ensure compliance with the agreed-upon timeline and schedule.

#### ▪ **Providing Support and Assistance for the Activities of the Exercise Project Team**

The provision of necessary resources and logistics should be ensured by the exercise program manager to support the exercise project team in planning, conducting and evaluating the exercise. However, the exercise program manager must also ensure that the support extended to the exercise project team does not exceed the allotted resources and budget.

All products developed by the exercise project team (e.g., concept of exercise, timeline and schedule, scenario, exercise documents) should be approved by the exercise program manager before being circulated to those responsible for the exercise program or project.

### 5.3. Evaluating (Step 3)

To improve or modify future exercise programs, the entire exercise program, including individual exercise activities, should be evaluated by the exercise program manager. Through such monitoring and assessment, the exercise program manager evaluates, among other things, the following:

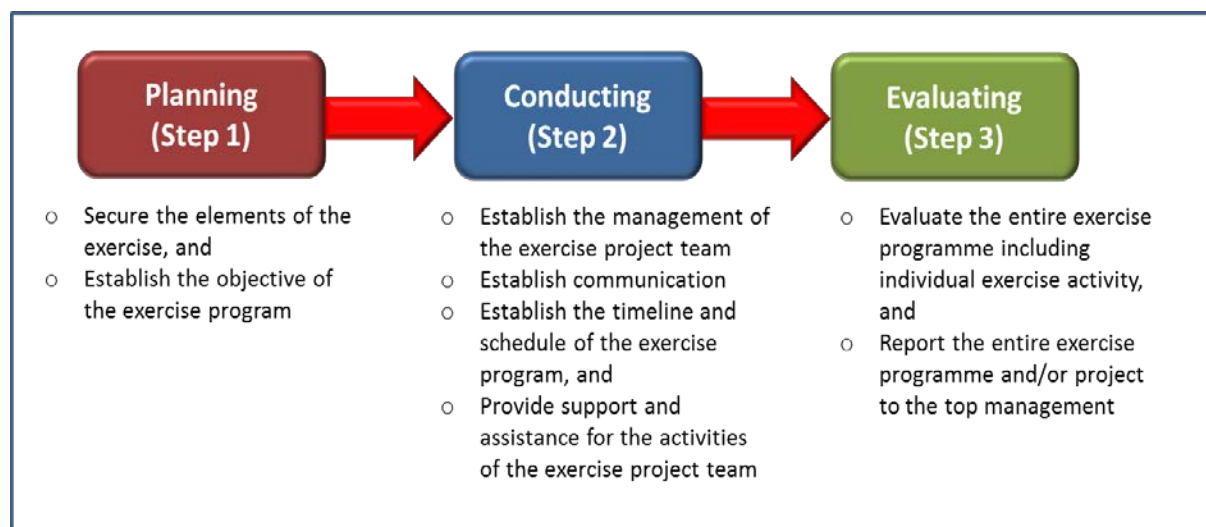
- The performance of exercise project team members
- The ability of the exercise project team to implement the exercise program
- The ability of exercise participants to respond to designed scenarios
- Feedback from interested parties, exercise participants and exercise project team members

The evaluation of the exercise program should be reported to the top management of the economy or government organization, or to other relevant organizations, for their consideration and to obtain guidance on future exercise programs.

If the exercise program receives an unsatisfactory evaluation but still needs to be continued, the economy or government organization can consider extending its implementation by creating multi-year training and exercise programs in oil and gas.

For the purposes of evaluating the exercise program and exercise project, the exercise program manager should document all activities using a documentation system.

*Figure 3. Overall Exercise Program Activities*



## 6. Exercise Project

The exercise program may contain one or more individual exercises. Once the economy or government organization has established the exercise organization, the development and implementation of the exercise project will be the responsibility of the exercise project team leader. However, all products developed by the exercise project team should get approval, and all planned activities should be coordinated with the exercise program manager to ensure

alignment with the needs, strategic objectives and strategies of the economy or government organization.

Similarly, with the exercise program, developing and implementing the exercise project also entails three steps that need to be considered by the leader of the exercise project team: Planning, Conducting, and Evaluating.

The Planning Step (Step 1) consists of two phases: design and develop. The design phase involves several necessary activities that need to be undertaken by the exercise project team. These activities include the following: securing the elements of the exercise (analyzing needs, obtaining commitment and support from top management, establishing the management of the exercise project team, securing the budget, managing confidential data and information), formulating the objectives and scope, selecting the exercise methods and types, establishing the timeline and schedule, instituting communication, and identifying logistics needs. The develop phase, on the other hand, mostly focuses on developing exercise scenarios and documentation.

The Conducting Step (Step 2) explains the necessary activities, including setting up, briefing, starting, maintaining, evaluating and ending the exercise. The Evaluating Step (Step 3) covers the evaluation through debrief, the exercise report and the exercise follow-up (see [Figure 9](#)).

## **6.1. Planning (Step 1)**

Prior to planning the exercise project, the management of the exercise project team should have already been established by the exercise program manager. It is also recommended that the elements or requirements (analyzing needs, obtaining commitment and support from top management, establishing the exercise organization, securing the budget, and managing confidential data and information) be established and secured in advance with the economy or government organization. As such, the necessary activities to be prepared by the exercise project team include the following:

### Design

- Establish objectives and scope
- Select the exercise methods and types
- Establish timeline and schedule
- Select exercise participants
- Institute communication
- Identify logistical needs

### Develop

- Develop exercise scenario
- Develop exercise document

The activities to be carried out by the exercise project team during the design phase are described below.

- **Establish Objectives and Scope**

The exercise project objectives explain the proposal for solving a problem or meeting an opportunity related to oil and gas supply disruptions. These objectives should be “SMART”: Specific, Measurable, Achievable, Relevant, Time-bound.

- **Specific:** Objectives must be clear and unambiguous regarding expected outputs and outcomes to be achieved by the economy or government organization.
- **Measurable:** Objectives must have measurable outputs and outcomes to identify whether the exercise project has been successfully conducted.
- **Achievable:** Objectives must be realistic and attainable. This means the project should present realistic expectations regarding the oil and gas supply situation and should not be too difficult to attain.
- **Relevant:** Objectives must help the economy or government organization rehearse for different situations in a way that will improve the performance and capacity of the system and personnel in dealing with oil and gas supply disruptions.
- **Time-bound:** Objectives should have timelines with starting points and deadlines. It must be possible to fully achieve the objectives by the end of the exercise project.

The scope of the exercise project should be determined based on the analysis of needs, the availability of resources (e.g., finance and personnel), the number of organizations involved in the exercise and the extent of the exercise (e.g., area, length, type).

While the scope of the exercise in oil and gas security should accommodate the interests of the relevant organizations or interested parties, it should also avoid unnecessary participation from others.

- **Select the Exercise Methods and Types**

The exercise project team should select the exercise methods and types to be conducted based on the objectives and scope. An exercise can combine multiple methods and types, but the economy or government organization should remember that the selected methods and types will affect the resources (e.g., financial, personnel) to be allocated and secured.

As specified by ISO 22398:2013, there are two categories of exercise methods:

- **Discussion-Based Exercises**

This method is suitable for familiarizing participants with current systems (e.g., plans, policies, agreements, procedures) and the development of new systems. Discussion-based exercises include seminars, workshops, tabletop exercises and discussion-based games.



### ○ **Operations-Based Exercises**

This method is best used for validating systems (e.g., plans, policies, agreements, procedures) and clarifying the roles and responsibilities of personnel. The real conditions of events are simulated to identify system and personnel gaps in an operational environment. Operations-based exercises include drills, functional exercises, and full-scale exercises.

The types of exercises are described below (see [Table 3](#)).

### ○ **Seminar**

This exercise is most applicable when the economy or government organization wants to familiarize its staff with existing systems (e.g., policies, plans, procedures, protocols, strategies, roles), or is developing or changing existing systems, through informal discussions. An experienced facilitator needs to be assigned to assist with this event. The event typically takes one to two hours and requires about one week of preparation.

### ○ **Workshop**

This exercise is appropriate when the economy or government organization wants to expand the performance and capacity of staff in achieving or building new or revised systems (e.g., policies, plans, procedures, protocols, strategies, roles). It can also be used to aid the economy or government organization in writing exercise objectives and scenarios. As with seminars, an experienced facilitator needs to assist with the event. This activity takes two to eight hours and requires one to two weeks of preparation.

**Note:**

*Seminars and workshops can also be useful when the economy or government organization wants to give stakeholders an overview of the performance and capacity of systems and personnel to respond to oil and gas supply disruptions.*

### ○ **Tabletop Exercise**

Through discussion of simulated scenarios among key personnel in an informal setting, this exercise can be used to assess the performance and capacity of the system and personnel to respond to emergency situations. The participants discuss the issues that arise from the simulated events in order to come up with solutions.

The exercise can be timed to require rapid decision making or untimed to allow for in-depth discussion and development of solutions. Untimed tabletop exercises are normally used first, followed by timed exercises. This activity is led by a facilitator and can involve many people and organizations. The activity typically takes two to four hours or longer (up to three days) and requires one to three months of preparation.

### ○ **Discussion-Based Game**

This exercise assesses performance through discussions of simulated scenarios by two or more teams of key personnel in a competitive setting. Often combined with tabletop exercises, this activity (also called “virtual exercises”) uses data and technology to engage

participants and create stress through simulated behavioral conditions. A facilitator leads this activity as well, and it can involve many people and organizations. Typically, it takes two to four hours or longer (up to three days) and requires one to three months of preparation.

- **Drills**

This exercise involves testing the specific performance and capacity of the system and personnel within a single organization (e.g., testing new policy, procedure or equipment). Coordination with other agencies is not necessary. A manager, supervisor or exercise coordinator leads the drill. The activity typically takes four to eight hours and requires about one to two weeks of preparation.

- **Functional Exercise**

This exercise can be used to validate or evaluate the performance and capacity of the system and personnel, especially those involved in the chain of command and control system, to respond to an emergency situation through a coordinated response to a scenario in a time-pressured, realistic simulation. An exercise coordinator leads the activity. Normally, the activity takes four to eight hours or longer (up to one or more days) and requires six to eighteen months of preparation.

- **Full-Scale Exercise**

This exercise can be undertaken to evaluate the operational performance and capacity of the system and personnel of the emergency management system to respond to an emergency situation by simulating actual response conditions (i.e., simulating a real event as closely as possible) in a highly stressful environment. It requires the mobilization and actual movement of emergency systems (e.g., equipment), personnel and resources. This activity is led by an exercise coordinator. Typically, the activity takes four to eight hours or longer (up to one or more days) and requires about six to eighteen months of preparation.

- **Establish Timeline and Schedule**

The purpose of establishing a timeline and schedule for the project is to present the details regarding how the proposed exercise activities will be carried out (who, what, where, when, how). A realistic timeline and schedule should be defined by the exercise project team leader by considering such aspects as:

- Minimum negative effect on the organization's routines and operations, especially if the exercise activity will be conducted in oil/gas facilities
- Time taken (daytime or nighttime)
- Holiday schedules
- Weather and other seasonal considerations

Once a realistic timeline and schedule for the exercise activities is approved by the exercise program manager, the exercise project team should make an effort to follow the agreed-upon timeline and schedule.

## ▪ **Select Exercise Participants**

Based on the needs, objectives and scope of the exercise activity, and considering budget allocation, the exercise project team should determine the number of participants and organizations to be involved in the exercise.

Determining the number of participants and organizations also depends on the types and levels of exercises selected. At the national strategic exercise level, the participants should be selected from stakeholders, which should include not only government organization authorities but also representatives from oil and gas companies (public and private) and interested parties.

The following are some criteria that can be used to select exercise participants:

- Persons or organizations directly involved in handling oil and gas supply disruptions
- Persons or organizations directly involved in policy making to mitigate oil and gas supply disruptions
- Persons or organizations that can be affected by disruptions in oil and gas supply or be affected by actions taken to deal with such disruptions
- Persons or organizations directly involved in handling communication and information to the public.

Persons or organizations involved in the exercise should be informed of the benefits and date of the exercise, in addition to other administrative information (e.g., registration), as early as possible before the exercise is conducted. The exercise project team must prepare administrative information for the participants' guidance.

## ▪ **Establish Communication**

The exercise project team should establish the communication strategies and methods to be used during the planning, conducting and evaluation of the exercise activity. This will help avoid conflicts in communication methods and protocols, and reduce confusion among team members and participants.

Some communication methods that can be used are as follows:

- Face-to-face conversation (e.g., meetings and presentations)
- Written communication (e.g., reports, memos, presentation materials)
- Oral communication (e.g., phone conversations)
- Online communication (e.g., internal e-mails and intranet)
- Multimedia communication (e.g., television, video, radio)

As part of the communication strategy, the working language of the exercise should be determined by the exercise project team, especially when experts or participants from abroad are involved. If the local language will be used for meetings and discussions, simultaneous translation into English should be provided.

The communication strategies and methods used in the exercise should be able to effectively inform all participants of when the exercise will begin and end, the scenarios involved, and the responses and evaluations to be presented.

During the exercise, multimedia communication may be used to present and explain the scenarios. The exercise project team should be thorough in preparing this communication and should test it prior to the exercise.

Table 3. Characteristics of Exercises

Categories of Exercises	Discussion-Based Exercises				Operations-Based Exercises		
Types of Exercises	Seminar	Workshop	Tabletop Exercise	Discussion-Based Game	Drills	Functional Exercise	Full-Scale Exercise
Use/purpose	Familiarizing staff with existing systems or changes/developments in the existing system	Increasing performance & capacity of staff in achieving or building new or revised systems  Writing exercise objectives and scenarios	Assessing the performance & capacity of the system & personnel to respond to an emergency situation	Assessing the performance & capacity of the system & personnel to respond to an emergency situation	Testing the single, specific performance & capacity of the system & personnel in a single organization	Validating or evaluating performance & capacity of the system & personnel to respond to an emergency situation, especially those involved in the chain of command and control system	Evaluating the operational performance & capacity of the system & personnel to respond to an emergency situation as real as possible
Format	Informal discussion  An experienced facilitator needs to be assigned	Informal discussion  An experienced facilitator needs to be assigned	Discussion of simulated scenarios in an informal setting  An experienced facilitator needs to be assigned  Involves many people and organizations	Discussion of simulated scenarios in an informal setting by two or more teams  An experienced facilitator needs to be assigned  Involves many people and organizations	Conducted by a single organization for one specific task  Coordination with other organizations is not necessary  A manager, supervisor or exercise coordinator needs to be chosen as a lead	Coordinated response to a scenario in a time-pressured, realistic simulation  Led by an exercise coordinator	Simulating the actual response conditions in a highly stressful environment  Requires the mobilization and actual movement of emergency systems, personnel and resources  Led by an exercise coordinator

<b>Categories of Exercises</b>	<b>Discussion-Based Exercises</b>				<b>Operations-Based Exercises</b>		
<b>Types of Exercises</b>	<b>Seminar</b>	<b>Workshop</b>	<b>Tabletop Exercise</b>	<b>Discussion-Based Game</b>	<b>Drills</b>	<b>Functional Exercise</b>	<b>Full-Scale Exercise</b>
Time for the event	1-2 hours	1-2 hours	2-4 hours or longer, up to 3 days	2-4 hours or longer, up to 3 days	4-8 hours	4-8 hours or longer, up to 1 or more days	4-8 hours or longer, up to 1 or more days
Time for preparation	1 week	1 week	1-3 months	1-3 months	1-2 weeks	6-18 months	6-18 months

Source: ISO 22398:2013, IOC Manuals and Guides No. 58 and IPIECA-OGP Report Number 515

▪ **Identify Logistics Needs**

Exercise logistics needs will vary based on the selected method and type of exercise. The exercise project team, especially the logistics team, should identify the specific supplies and materials, equipment, services, and facilities required for the exercise, including the location where the exercise will take place (see *Table 4*). If the exercise activity will be conducted in oil/gas facilities, the necessary permits need to be secured in advance from authorities, and the activity should only minimally affect daily operations. In such cases, safety equipment also needs to be identified by the logistics team.

The use of logistics, including budget expenditures, should be accounted for and reported regularly to the exercise program manager. If the budget is not sufficient to fund the logistics needs, the exercise project team leader must immediately report to the exercise program manager to find a solution.

*Table 4. Example of Logistical Needs in a Tabletop Exercise*

Supplies and materials	printer paper, printer toner, CD or USB, pens and pencils, whiteboard markers, identification badges, stapler, binder, paper clips, backdrop, table tents
Equipment	whiteboard, computer(s), projector, screen, photocopy machine, voice recorder, telephone/other communications, microphone
Services	catering, medical support, site security, photography, making videos to show scenarios
Facilities	venue, accommodations, transportation, parking

The activities that need to be prepared by the exercise project team during the develop phase are described below.

▪ **Develop Exercise Scenario**

The oil/gas scenario is the storyline or theme written in a narrative form depicting a timeline describing emergency events that stimulate the participants to respond so their actions can be evaluated.

The scenario should not be too complicated and should describe credible threats/hazards that could occur inside or outside the economy that could disrupt oil/gas supply. The exercise participants will have to make decisions or take action in response to the scenarios. The evaluation team can then assess the decisions or actions of the participants. The participants must understand that they are not there to challenge the plausibility of the scenario but to discuss its implications.

The scenarios are developed by the planning team in accordance with the exercise objectives and scope. If security and confidentiality issue need to be considered, scenarios can be formulated using non-real names or generic names for oil/gas facilities, infrastructure

services or locations (see “Handling Confidential Data and Information”). It is recommended that scenarios avoid sensitive issues or information, such as using real names for terrorist groups or venues (e.g., a private company).

Further, the planning team should understand the conditions and situations of the oil and gas supply chain, geographic location, weather events, and sociocultural features of the economy. Such knowledge can be useful for presenting plausible threats/hazards that could trigger oil/gas supply disruptions. Adjusting the degree or scale of actual prior incidents related to oil/gas supply can also be a good method for creating scenarios.

Examples of potential threats/hazards to oil and gas supply security that could be used to create scenarios are shown in *Table 5*.

*Table 5. Some Potential Threats/Hazards to Oil and Gas Supply Security*

Source	Type of Threat/Hazard	Example
From Inside	Weather Event	Typhoon, Hurricane, Flooding
	Geographic Condition	Earthquake, Volcanic Eruption, Landslide, Tsunami
	Terrorists Attack	Bombing, Piracy, Hijacking, Cyber Attack
	Sociocultural Instability	Labor Issues, Social Unrest, Sectarian Differences, Sabotage
	Accident in Supply Chain	Fire, Oil/Gas Leakage, System Malfunction
	Disease Epidemic	Middle East Respiratory Syndrome (MERS), Severe Acute Respiratory Syndrome (SARS), bird flu
From Outside	Instability in the Middle East, Africa or Other Exporting Oil and Gas Economies	War, Terrorism, Sectarian Differences, Sabotage, Changes in Government Decisions
	Insecurity in Oil and Gas Chokepoint (Bab-El-Mandab, Strait of Hormuz, Strait of Malacca)	War, Terrorism, Piracy, Hijacking

Source: Tanaka, 2013, with some modification

In creating scenarios, the planning team may use information based on APERC’s threats/hazards assessment regarding oil/gas security in the APEC region (see *Figure 4*) as follows:



- The APEC region aligns with the “Pacific Ring of Fire,” where volcanoes and earthquakes are common.
- APEC’s demand for oil and natural gas significantly exceeds internal production, and APEC relies highly on outside sources such as the Middle East and Africa.
- APEC oil and LNG imports are highly dependent on maritime routes through extremely busy straits such as Bab-El-Mandab, the Strait of Hormuz and the Strait of Malacca.
- Oil and LNG are shipped over long distances, typically from the politically unstable Middle East and Africa. Issues that may affect oil and gas supply from those areas, such as the “Arab Spring,” could disrupt the supply, thus triggering possible increases in international market prices. Others events, like the civil war in Sudan (Sudan was divided in two countries—Sudan and South Sudan), could also seriously affect piped oil exports via Sudan’s Red Sea ports and create uncertainty in oil supplies coming from exporting countries using those ports.

The scenario should systematically structure an appropriate background that can be easily understood by the participants. As noted in ISO 22398:2013, a systematic structure is often achieved by constructing the scenario using the three levels described below.

- Events

Events describe the general content of the exercise scenario. The number of events depends on the exercise objectives and scope. Several independent events may be required to give more challenges to the participants. However, a high number of events would require the participants to spend more time responding, which could affect the quality of the responses.

- Incidents

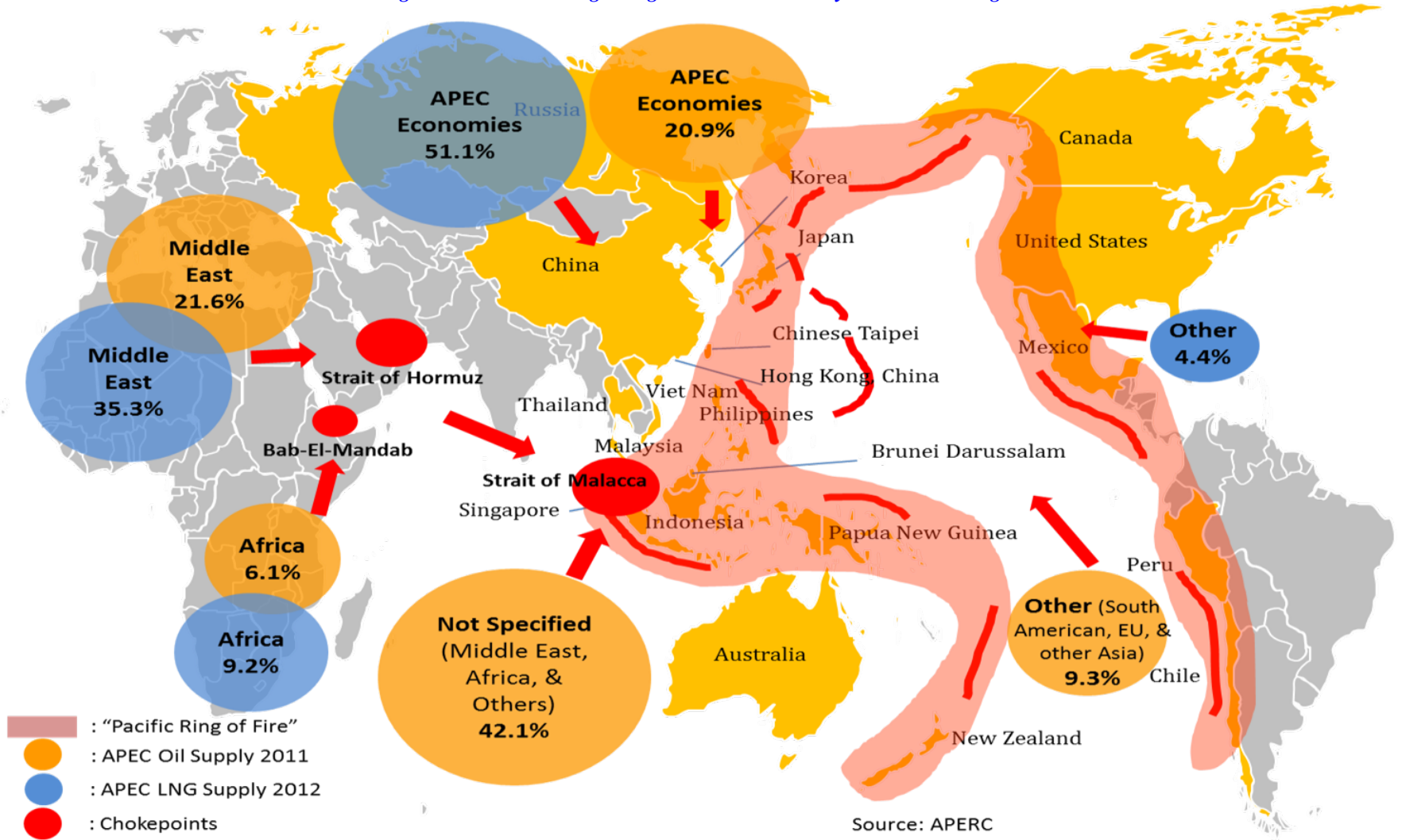
Each event includes a number of consequences, also known as incidents. The number of incidents should keep exercise participants occupied but not overwhelmed. The planning team should have extra incidents as contingencies and inject them during the exercise activity when a previous incident is irrelevant or unsuitable, or the participants are not performing the necessary actions.

- Injects

Injects are used to create an additional problem that is inserted into the exercise and designed to be solved by the participants. Injects are contingencies used to sustain the exercise when existing incidents become irrelevant or unsuitable, or the participants are not performing the necessary action. They are also used to build the exercise operating environment and drive exercise play toward achieving the exercise’s objectives.

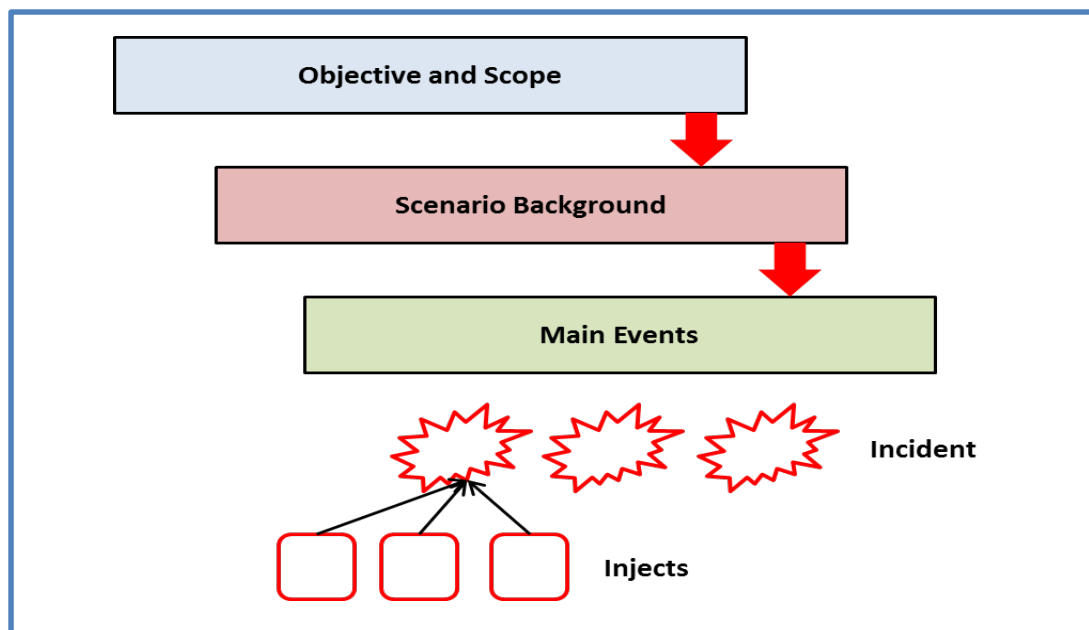
To properly evaluate the exercise achievement, events, incidents and injects should have a clear relationship with the scope and objectives of the exercise (see [Figure 5](#)).

Figure 4. Main Facts regarding Oil and Gas Security in the APEC Region



Source: Irie, 2014

Figure 5. Exercise Scenario Structure



Source: ISO 22398:2013

Below are some pointers and suggestions for writing the scenario narrative.

The scenario narrative should not be long—no more than five to seven paragraphs. It should be specific and not overly complicated in its details. Moreover, it should describe a plausible threat/hazard that could occur, or an actual oil/gas supply incident from the past with adjustments for degree or scale. Events should be outlined in chronological order and written using clear language (if there are foreign participants or experts, scenarios should be written in English or both English and the local language). Finally, the scenario should end with the current known situation.

#### **Background of Emergency Situation (Events):**

- What is the situation of the oil/gas facilities? Provide information regarding the facilities (e.g., location, product, owner, the significance of the facility for the economy).
- Are there any historical emergency incidents related to the facilities? Try to search for past incidents.

#### **Emergency Situation (Incidents):**

- What has happened? Explain the threats/hazards related to the facilities.
- What is the extent of the physical damage? Explain the results of the incident.
- What is the current status of the facilities? Are operations partially or totally paralyzed?
- How long will it take to complete restoration? One week, two months, one year?

To create an attractive scenario for the participants, the scenario can be conveyed in a multimedia format (e.g., video, radio, simulation equipment) that explains the background of the events, incidents and injects in a realistic way. To achieve this, the planning team should have an expert in communications (see [Figure 6](#)).

*Figure 6. Example of an Exercise Scenario that Uses Multimedia*



Source: APERC, 2013

#### ▪ Develop Exercise Documents

The exercise project team should prepare documents to be used during the exercise, such as those related to exercise play and the event. The number of documents, as well as their level of detail, will depend on the type of exercise. In general, discussion-based exercises do not require as many documents as operation-based exercises. Exercise documents produced by the exercise project team can include the following:

##### Documents Related to Exercise Play

###### ○ Exercise Plan/Guidebook

The exercise plan/guidebook contains the objectives and scope, date and venue, participants, confidentiality clause, agenda, information on oil/gas condition, phase of the exercises, and phase of the responses to the scenario. The guidebook should not provide detailed scenario information (see [Appendix II](#)).

###### ○ Master Scenario Events List

The master scenario events list (also known as a running sheet, program, script or main even list) is a detailed sequence of events that will be injected during the exercise to prompt decisions and actions (responses) from the participants. This list should not be circulated to the participants prior to the exercise activity.

##### Documents Related to the Event

###### ○ Invitation Letter

The invitation letter should contain the name of the host organization, the background, the objectives and scope of the exercise, the date and venue, and the contact person. The letter must be signed by the exercise program manager.

○ Administrative Information

This document provides information related to exercise administration, such as the date and venue, contact person, registration and identification badges, opening ceremony of the session, dress code, working language, and registration form (see [Appendix III](#)).

○ Final Exercise Report

After completion of the exercise activity, the exercise project team should develop the final exercise report, which includes information about the implementation of the exercise (e.g., objectives and scope, date and venue, participants), scenarios, responses, strengths and weaknesses, and recommendations for improvement (see [Appendix V](#)).

○ Feedback Form

The feedback form solicits comments and feedback from the participants regarding the implementation of the exercise project. Such feedback is useful for improving the project in the future (see [Appendix VI](#)).

○ Financial Report

This report is used by management to evaluate the adequacy of the funding used to support the implementation of the exercise.

## **6.2. Conducting (Step 2)**

After the necessary preparation activities are performed in the Planning Step (Step 1), the next step to be carried out by the exercise project team is the Conducting Step (Step 2). The Conducting Step comprises several activities: setting up, briefing participants, starting the exercise, maintaining the exercise, evaluating activities and ending the exercise.

### **▪ Setting Up**

If a discussion-based exercise is conducted, the setting-up process will be as follows:

- Exercise project team members (logistics team and administration/finance team) should visit the exercise site one day prior to the exercise event to ensure, arrange and set up the logistics (supplies and materials, equipment, services, facilities) that will be used during the exercise activity.
- On the day of the exercise, the logistics and administration/finance teams should arrive several hours early to resolve any remaining logistical or administrative items and arrange for registration.
- Prior to conducting the exercise, the logistics and administration/finance teams should deliver the necessary exercise materials and equipment to all the participants, including:
  - Exercise plan/guidebook

- Identification badges based on their role (e.g., participant, evaluator, observer, exercise project team)
- Presentation materials (if any)
- Translator devices (if there are participants or experts from foreign economies)
- Participant feedback form

Implementing an operations-based exercise is more complex than implementing a discussion-based one. This is because of the need for an operating environment and/or the mobilization of personnel and equipment. As such, in the setting-up phase, the exercise project team members (logistics and administration/finance teams) should ensure, arrange and set up the logistics (supplies and materials, equipment, services, facilities) that will be used during the exercise activity well in advance of the event. Some of the logistics that need to be ensured, arranged and set up include:

- Exercise operating areas and perimeters
- Control room and/or briefing rooms
- Data and communication equipment (e.g., telephone, radio, transmittal data)
- Props and effects for simulation
- Safety-related arrangements

▪ **Briefing**

The purpose of briefing participants is to not only present the background of the exercise (e.g., objectives and scope), the agenda and the communications to be used, but also—and most importantly—to make all participants (including facilitator, evaluator, controller, and observer) aware of their roles and responsibilities during the exercise. Normally, the briefing phase for discussion-based exercises will run as follows:

- Remarks by the exercise program manager and senior officials of the government organization that manages energy crises or emergencies (acting as the National Emergency Strategic Organization [NESO])
- Brief introductions for all participants, especially the facilitator, evaluator, controller and observer (if any)
- Explanation from the exercise planning team members regarding the exercise background, agenda and communication to be used, as well as the roles and responsibilities of the participants, facilitator, evaluator, controller and observer (if any)
- Question and answer

*Figure 7. Example of Briefing Participants for a Discussion-Based Exercise*



Source: APERC, 2013

Meanwhile, the briefings for operations-based exercises are typically done as follows:

- The exercise planning team leader provides briefings to all exercise planning team members, especially those who will become controller and evaluator. This often includes explanations regarding the operation of data and communications equipment (e.g., computers, telephones), question-and-answer sessions, and touring the exercise site. The briefing is conducted maximum one day prior to the exercise.
- The exercise planning team leader briefs all participants and even observers (if any). This is followed by a question-and-answer session before the exercise begins. If multiple venues will be used during the exercise, the participants for each venue need to be briefed separately by the exercise planning team leader or other planning team members a maximum of one day prior to the exercise.

#### ▪ **Starting the Exercise**

The way the exercise begins may vary depending on the exercise method and type. For discussion-based exercises, such as seminars, workshops, tabletop exercises and discussion-based games, the exercise can begin as follows:

- The exercise facilitator conveys information (e.g., specific issues, the scenario) to the participants verbally, via handouts or using multimedia (or a combination of these).
- The participants talk among themselves to respond to the information.
- The exercise facilitator oversees the pace and focus of the exercise and leads the discussion.

For operations-based exercises, such as functional and full-scale exercises, the exercise may start as follows:

- The exercise coordinator presents information (e.g., scenario, simulation incident) to the participants verbally, via handouts or using multimedia (or a combination of these). To avoid any perception of real conditions from other organizations, all documents must say “material exercise only,” and any verbal communication must begin with, “This is an exercise.”
- The participants respond to the information through simulated activities or the mobilization of personnel and equipment.
- The exercise coordinator oversees the pace and focus of the exercise.

▪ **Maintaining the Exercise**

To maintain the exercise activity (e.g., actions of the participants and the pace of the exercise), the exercise facilitator or exercise coordinator may use injects. The exercise planning team should have extra information or incidents that can be injected anytime during the exercise activity. These injects need to be well planned out in advance.

The exercise facilitator or exercise coordinator should monitor the flow of information and participant activity to respond to information or incidents during the exercise. The exercise facilitator or exercise coordinator should pause or stop the exercise immediately under the following circumstances:

- There is a situation among the participants that needs clarification or correction to resolve a misunderstanding.
- The current activities need to be temporarily reviewed to evaluate the action, provide more information and advice, or adjust the activities.
- There is an unsafe condition.

▪ **Evaluating Activities**

The evaluators should conduct evaluations during the exercise. The evaluators should take notes to record discussion issues, actions and response times, decision-making processes, and the availability of the system. The evaluation is used as an instrument for the overall assessment of personnel and system performance, as well as the capacity to respond to incidents. The evaluations are the basis for providing recommendations for improvement.

If an evaluator comes from a foreign economy, an interpreter must be provided during the exercise (see “Establishing Communication” under “5. Exercise Project”).



*Figure 8. Example of Discussion among Participants where the Evaluators are Involved*



Source: APERC, 2013

#### ▪ **Ending the Exercise**

The end of the exercise should be announced by the exercise facilitator or exercise coordinator using the same communication method used to start, pause or stop the exercise. The exercise facilitator or coordinator may end the exercise if:

- The exercise objectives have been achieved to the extent possible
- The pre-planned time of the exercise has been achieved

### **6.3. Evaluating (Step 3)**

After the Conducting Step, the Evaluating Step (Step 3) is undertaken with the primary purpose of:

- Identifying improvements needed in the economy or government organization, in terms of both performance and the capacity of the system and personnel
- Establishing whether the exercise achieved its objectives and scope

The Evaluating Step consists of the following activities: evaluation through debrief, the exercise final report and exercise follow-up.

#### ▪ **Evaluation through Debrief**

After the exercise facilitator or coordinator announces the end of the exercise, the facilitator or coordinator should organize and manage the evaluation through debrief. The purpose of debrief is to collect, discuss and clarify exercise feedback from participants. Since participant feedback may be useful for improving the performance and capacity of the system

and personnel, the exercise facilitator or coordinator should allocate enough time for all participants, regardless of seniority or position, to participate in the debrief session.

Debrief sessions should focus on how well objectives were met and may include:

- Acknowledging the good performance and capacity of the system and personnel
- Identifying weaknesses in the system and personnel without assigning blame
- Reviewing the decision-making processes, or the organization's responsibility, for responding to oil/gas supply disruptions
- Noting specific questions or constructive suggestions from participants
- Recording relevant information so reports can be compiled
- Summarizing key points and suggesting follow-up actions

There are usually two debriefs that may be conducted after an exercise: hot debrief and cold debrief.

- Hot debrief

Participants provide feedback immediately after the exercise ends when it is still fresh in their minds. This is also known as "hotwash."

- Cold debrief

Feedback is given a few days or weeks after the exercise through formal communication. It is recommended that the cold debrief should be submitted no more than four weeks after the exercise. In this case, a participant feedback form may be used (see [Appendix VI](#)).

During the debrief sessions, the exercise facilitator or coordinator should also allocate time for the evaluators to give their observations and evaluations of the exercise, as well as their recommendations for improving the performance and capacity of the system and personnel. The discussion during the debrief session should be documented or recorded. All information from the debrief (solicited from participants and evaluators) should later be incorporated in the exercise report.

After the exercise, the exercise project team may conduct a separate meeting among the members to make observations and provide suggestions for improving the exercise project. This feedback may be put in a separate report.

- **Exercise Final Report**

The exercise project team should develop the exercise final report immediately after completion of the exercise activity. The report should contain at least the following:

- Information about the implementation of the exercise (e.g., objectives and scope, date and venue, participants)
- The scenario, responses, strengths and weaknesses
- Recommendations for improvement

The exercise final report should be approved by the exercise program manager before it is submitted to the economy, government organization or other relevant organization(s).

▪ **Exercise Follow-ups**

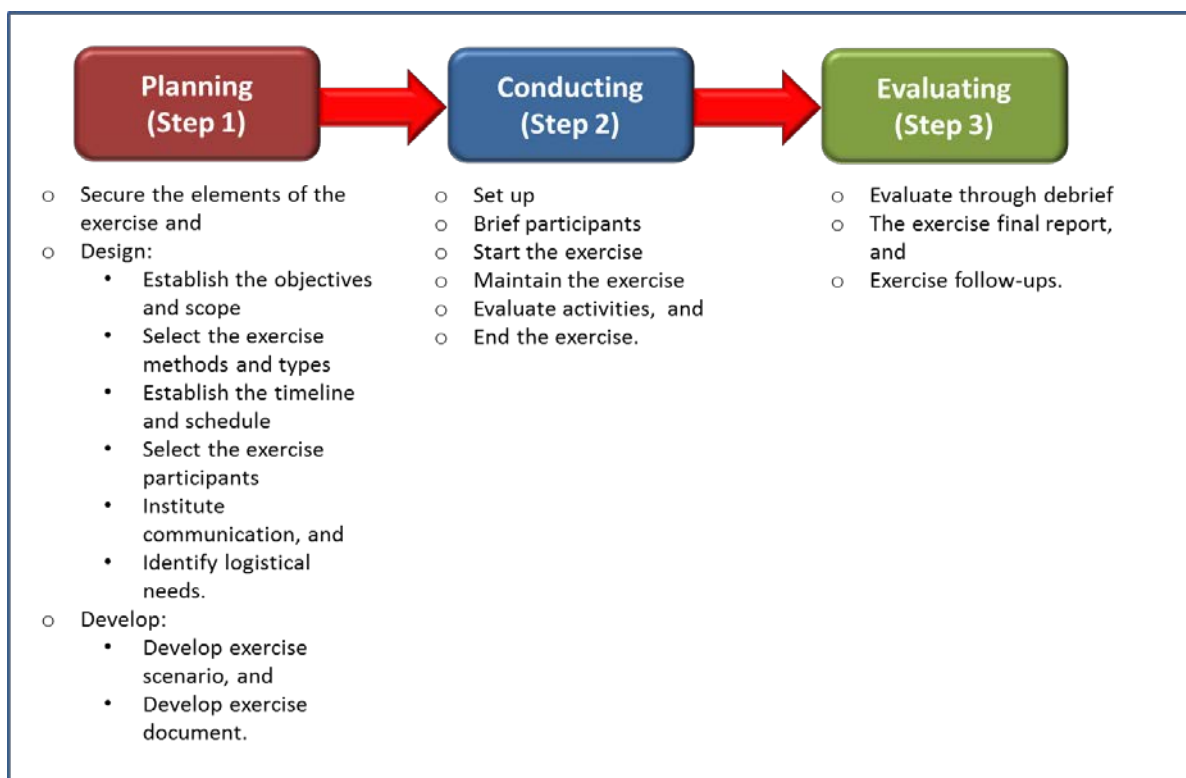
After the final exercise report has been approved by the exercise program manager, it should be submitted to the economy, government organization or other relevant organization(s).

The final exercise report’s recommendations must be enacted by the economy, government organization or other relevant organization(s) as corrective actions or improvements in the performance and capacity of the system and personnel to cope with future disruptions in the oil/gas supply.

Based on the exercise report’s recommendations, the economy, government organization or other relevant organization(s) should consider and execute the following:

- Assign clear responsibilities (e.g., tasks and functions) to personnel who are involved in policy making or in charge of handling oil and gas supply disruptions.
- Establish a monitoring system to track progress on implementing the recommended improvements to systems and personnel.
- Provide regular reports to top management regarding the progress on implementing the recommended improvements. If shortcomings are found, provide constructive suggestions for improvements or actions.

*Figure 9. Overall Exercise Project Activities*



## 7. Alternative Emergency Response Measures

This section provides some alternative emergency response measures that can be considered by the economy or government organization to cope with supply disruptions in oil and gas. These measures were collected based on responses from the economies or government organizations that participated in the “APEC Oil and Gas Security Exercises: Joint Southeast Asian Exercise” in Bangkok, Thailand, and the “APEC Oil and Gas Security Exercises: Indonesia Exercise” in Jakarta, Indonesia. Experts’ comments are included as well.

It is strongly recommended that the economy or government organization implement the approaches in this document by taking into account their existing standards and procedures for handling oil/gas supply disruptions.

### 7.1. Oil Emergency Response Measures

- **Supply Side**

Supply-side alternative oil emergency response measures may include the following:

Measure	Assessment	Time to Respond
Drawdown Oil Stock	<p>Good, effective measure to immediately cope with oil supply disruptions. However, the economy or government organization needs to have an oil stockpile before the measure can be undertaken. If the economy already has it, mechanisms and procedures need to be established for the drawdown and for maintaining the capacity level of the stock.</p> <p>It is strongly recommended that the economy or government organization consider developing an oil stockpile in the future.</p>	<p>Short-Term</p> <p>(only for an economy or government organization that has oil stockpiles)</p>
Utilize Spare Capacity	<p>This can be done only if there is no problem with crude oil production or domestic refinery availability. The economy or government organization needs to check the utilization rate of its refineries before this measure can be undertaken.</p> <p>It is strongly recommended that the economy or government organization consider securing a proper spare capacity of its domestic refineries to increase fuel production in case of emergency.</p>	<p>Short-Term to Medium-Term</p> <p>(depends on the availability of crude oil and utilization rate of refineries)</p>

<p>Secure Crude Processing Deals (CPDs)</p>	<p>A good measure to cope with oil supply disruptions after maximizing domestic refinery capacity. However, the economy or government organization must have information about the available capacity of potential refineries abroad, their refining specifications and refining contracts before the measure can be considered.</p> <p>The economy or government organization needs also to obtain a budget for CPDs.</p> <p>It must be noted that during severe supply disruptions, oil availability will be a great challenge.</p>	<p>Short-Term to Medium-Term (depends on the location of CPDs abroad)</p>
<p>Seek Assistance from Other Economies</p>	<p>This can be done only if the economy or government organization has existing agreements with other economies or organizations (e.g., under the ASEAN Petroleum Security Agreement [APSA] for some APEC economies or under International Energy Agency [IEA] cooperation for some APEC economies).</p> <p>The economy and government organization should understand the terms and conditions for seeking assistance from other economies under such cooperation agreements.</p> <p><u>Note:</u></p> <p><i>Currently, only seven APEC economies are parties to APSA (Brunei Darussalam; Indonesia; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam), while six APEC economies are members of IEA (Australia; Canada; Japan; Korea; New Zealand; and the United States). Other APEC economies have no regional cooperation agreement(s) on oil security supplies.</i></p>	<p>Short-Term to Medium-Term (only for the economy or government organization that has agreements with other economies or organizations)</p>
<p>Secure Oil Imports</p>	<p>This is also a solution to the problem of supply disruptions of oil. However, the economy or government organization must have information about where the available oil and oil products can be imported from. Securing a budget for importing oil and oil products is necessary.</p>	<p>Short-Term to Medium-Term (depends on sources of imports from where or which economies)</p>

<p>Utilize More Biofuels</p>	<p>This is a good medium- to long-term option for reducing the consumption of oil during supply disruptions if the economy has enough stock of biofuels.</p> <p>However, the economy or government organization should consider that this measure may not be a practical option in emergency situations as biofuel production requires long processes—from farms to manufacturing plants—while oil supply disruptions require immediate action. Likewise, the introduction of higher biofuel blends necessitates further technical studies to determine whether the existing fleet of vehicles can accommodate such blend levels.</p>	<p>Medium-Term to Long-Term</p>
<p>Develop Oil Stockpile</p>	<p>This is a very important means of dealing with oil supply disruptions since releasing stockpiled oil could help the economy or government organization immediately cope with oil shortages.</p> <p>It is strongly recommended that the economy or government organization consider developing oil stockpiles in the future.</p> <p>Oil stockpiles can be developed either by individual economies or jointly with other economies through mutual cooperation on a commercial basis.</p>	<p>Long-Term</p>

▪ **Demand Side**

Demand-side alternative oil emergency response measures may include the following:

Measure	Assessment	Time to Respond
<p>Introduce Carpooling</p>	<p>This could be one measure for demand restraint. However, the implementation of this measure requires good coordination with other organizations in charge of transport sectors to provide the necessary detailed regulations. Moreover, the economy or government organization should prepare an implementation plan beforehand.</p>	<p>Short-Term</p>

	The government should be the point of dissemination of information to the public regarding the reason(s) for this action.	
Conduct Oil Rationing	<p>The economy or government organization should prepare an implementation plan beforehand, including the way to allocate fuels and its priority list (sectors to be prioritized). This necessitates close coordination with other organizations, especially to provide detailed regulations that must be carried out by the economy or government organization.</p> <p>The economy or government organization also needs to prepare a public communication plan in close cooperation with stakeholders, such as the local governments, to avoid panic buying. In this case, the government should be the point of dissemination of information to the public regarding oil supply disruptions.</p>	Short-Term to Medium-Term
Implement Energy Efficiency and Conservation for Power Consumption (Electricity-Saving Campaigns)	<p>By implementing energy efficiency and conservation for power consumption (electricity-saving campaigns), electricity demand can be reduced, which can result in lower oil consumption in power generation. It is a good measure if economy has a lot of oil-based power-generating facilities.</p> <p>The economy or government organization should prepare an implementation plan beforehand and establish good coordination with the organizations in charge of the electricity sector. In this case, the government should be the point of dissemination of information to the public.</p>	Short-Term to Medium-Term
Shift to Alternative Fuel for Power Generation	<p>This is a good option for reducing the consumption of oil during supply disruptions if the economy has a lot of oil-based power-generating facilities.</p> <p>However, the economy or government organization should consider that this measure may not be a practical option in emergency situations, especially if the switch to alternative fuels will come from renewable energy. This is because the development of renewable energy for power generation requires a long period for</p>	Medium-Term to Long-Term

	construction, while oil supply disruption requires immediate action.	
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## 7.2. Gas Emergency Response Measures

### ▪ Supply Side

Supply-side alternative gas emergency response measures may include the following:

Measure	Assessment	Time to Respond
Drawdown Liquefied Natural Gas (LNG) from Storage	<p>Good, effective measure to immediately cope with natural gas supply disruptions. However, the economy or government organization needs to have LNG storage tank facilities before the measure can be undertaken. If the economy already has such facilities, mechanisms and procedures for the drawdown and for maintaining the capacity level of storage need to be established.</p> <p>It is strongly recommended that the economy or government organization consider developing LNG storage tank facilities in the future.</p>	<p>Short-Term (only for the economy or government organization that has LNG storage tank facilities)</p>
Utilize Spare Capacity	<p>This can be done only if there is no problem with natural gas production or domestic regasification facilities. The economy or government organization needs to check the utilization rate of its liquefaction/regasification facilities before this measure can be considered.</p> <p>It is strongly recommended that the economy or government organization consider securing proper space capacity for its liquefaction/regasification facilities to increase gas production in case of emergency.</p>	<p>Short-Term to Medium-Term (depends on the availability of natural gas and the utilization rate of regasification facilities)</p>
Seek Assistance from Other Economies	<p>This can be done only if the economy or government organization has agreements with other economies or organizations (e.g., APSA and IEA cooperation for some APEC economies).</p> <p>The economy or government organization should understand the terms and</p>	<p>Short-Term to Medium-Term (only for the economy or government organization that has agreements with other economies or organizations)</p>



	conditions for seeking assistance from other economies under such cooperation agreements.	
Secure LNG Imports	This is also a solution to the problem of gas supply disruptions. However, the economy or government organization must have information about where available LNG can be sourced from. Securing a budget for LNG importation is necessary.	Short-Term to Medium-Term  (depends on the sources of imports from where or which economies)
Develop LNG Storage Tank Facility	This is a very important means for dealing with gas supply disruptions since releasing LNG reserves can help the economy or government organization immediately cope with natural gas shortages.  It is strongly recommended that the economy or government organization consider developing LNG stockpiles in the future.  LNG stockpiles could be developed either by individual economies or jointly with other economies through mutual cooperation with a commercial basis.	Long-Term

▪ **Demand Side**

Demand-side alternative gas emergency response measures may include the following:

Measure	Assessment	Time to Respond
Conduct Natural Gas (LNG) Rationing	The economy or government organization should prepare an implementation plan beforehand, including the way to allocate natural gas and its priority list (sectors to be prioritized). This necessitates close coordination with other organizations, especially to provide the necessary detailed regulations to be carried out.  The economy or government organization also needs to prepare a public communication plan in close cooperation with stakeholders, such as local governments, to avoid public panic. In this case, the government should be the point of dissemination of information to the public regarding oil supply disruptions.	Short-Term

<p>Implement Energy Efficiency and Conservation for Power Consumption (Electricity-Saving Campaigns)</p>	<p>By implementing energy efficiency and conservation for power consumption (electricity-saving campaigns), electricity demand can be reduced, which can result in lower natural gas consumption in power generation. This is a good measure if the economy has a lot of natural gas-based power-generating facilities.</p> <p>The economy or government organization should prepare an implementation plan beforehand and establish good coordination with the organization in charge of the electricity sector. In this case, the government should be the point of dissemination of information to the public.</p>	<p>Short-Term to Medium-Term</p>
<p>Shift to Alternative Fuel for Power Generation</p>	<p>This is a good option for reducing consumption of natural gas during supply disruptions if the economy has a lot of natural gas-based power-generating facilities.</p> <p>However, the economy or government organization should consider that this measure may not be a practical option in emergency situations, especially if the switch to alternative fuels will come from renewable energy. This is because the development of renewable energy for power generation requires a long period for construction, while natural gas supply disruption requires immediate action.</p>	<p>Medium-Term to Long-Term</p>

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**Appendix I**

**Oil and Gas Security Exercise Checklist**

Step	Event	Check (√)
<b>Before starting to develop and implement the exercise program or exercise project</b>		
1.	Determine the government organization in charge of developing and implementing the exercise program or project.  <i>(Only if the economy does not have a specific government organization for energy crisis and emergency management)</i>	
2.	Analyze the needs for developing and implementing the exercise program or project through the following actions: <ul style="list-style-type: none"> <li>• Review the current economy's or government organization's emergency management condition for oil and gas, in terms of both the system and personnel.</li> <li>• Examine the performance and capacity of the system and personnel (past and current).</li> <li>• Identify the performance and capacity of the system and personnel (e.g., strengths and weaknesses, gaps, conflicting policies, vague procedures or standards).</li> <li>• Determine the needs.</li> </ul>	
3.	Explain and present the need to develop and implement an exercise program or project to the top management to get their commitment and support.	
4.	Establish the exercise organization as follows: <ul style="list-style-type: none"> <li>• Assign a competent and experienced staff member as the exercise program manager.</li> <li>• Assign a competent and experienced staff member as the exercise project team leader.</li> <li>• Establish a planning team.</li> <li>• Establish a logistics team.</li> <li>• Establish an administration/finance team.</li> <li>• Establish other teams (if necessary).</li> </ul>	

Step	Event	Check (√)
5.	Secure budget for the exercise program or project as follows: <ul style="list-style-type: none"> <li>• Prepare a proposal for budget allocation.</li> <li>• The budget proposal is approved by the exercise program manager.</li> <li>• The budget demand based on the proposal is approved and allocated by top management.</li> </ul>	
6.	Make decisions about how to handle confidential data and information during the development and implementation of the exercise program or project.	
<b>Exercise Program</b>		
<b>Planning</b>		
7.	Secure the elements of the exercise (analyze the needs, obtain commitment and support from top management, establish the exercise organization, secure the budget, and manage confidential data and information).	
8.	Establish the exercise program objectives.	
<b>Conducting</b>		
9.	Establish the management of the exercise project team: <ul style="list-style-type: none"> <li>• Ensure the members of the exercise planning team represent the full range of participating relevant organizations.                             <ul style="list-style-type: none"> <li>○ Send invitation letters to the relevant organizations to participate as members of the planning team.</li> <li>○ Confirm the relevant organizations' participation as members of the planning team.</li> </ul> </li> <li>• Assign a competent and experienced staff member as the exercise project team leader.</li> <li>• Assign competent and experienced members of the planning team in the roles of exercise facilitator, controller, and/or evaluator.</li> </ul>	
10.	Determine the forms of communication to be used.	

Step	Event	Check (√)
11.	Establish timeline and schedule.	
12.	Ensure the necessary resources and logistics for the exercise project team.	
<b>Evaluating</b>		
13.	Evaluate: <ul style="list-style-type: none"> <li>• Performance of the exercise project team leader</li> <li>• Performance of the exercise project team members</li> <li>• Performance of exercise facilitator, controller, and/or evaluator</li> <li>• Ability of the exercise project team to implement the exercise program</li> <li>• Ability of the exercise participants to respond to the designed scenarios</li> <li>• Feedback from interested parties, exercise participants, and exercise project team members</li> </ul>	
14.	Check and endorse the final exercise report.	
15.	Report the entire exercise program or project to top management.	
<b>Exercise Project</b>		
<b>Planning</b>		
16.	Secure the elements of the exercise (analyze the needs, obtain commitment and support from top management, establish the exercise organization, secure the budget, and manage confidential data and information).	
17.	Establish objectives and scope.	
18.	Select the exercise methods and types.	
19.	Establish timeline and schedule.	
20.	Determine the number of participants and organizations to be involved in the exercise activity based on the needs, objectives and scope of the exercise activity.	

Step	Event	Check (√)
21.	Determine the forms of communication to be used.	
22.	Identify and secure logistics needs: <ul style="list-style-type: none"> <li>• Supplies and materials</li> <li>• Equipment</li> <li>• Services</li> <li>• Facilities</li> </ul>	
23.	Develop exercise scenarios.	
24.	Develop exercise documents, including: <ul style="list-style-type: none"> <li>• Documents related to exercise play:                             <ul style="list-style-type: none"> <li>○ Exercise plan/guidebook.</li> <li>○ Master scenario events list</li> </ul> </li> <li>• Documents related to the event:                             <ul style="list-style-type: none"> <li>○ Invitation letter</li> <li>○ Administrative information</li> <li>○ Participant feedback form</li> </ul> </li> </ul>	
25.	Get approval from the exercise program manager for the documents (e.g., invitation letter, administrative information, exercise plan/guidebook, master scenario events list and participants' feedback form).	
26.	Announce the oil and gas exercise as follows: <ul style="list-style-type: none"> <li>• Send invitation letter and administrative information to the target groups and interested parties participating in the exercise.</li> <li>• Confirm the relevant organizations' participation.</li> <li>• Collect registration forms.</li> <li>• Send the exercise plan/guidebook to the confirmed participants.</li> <li>• Send press release to media (if necessary)</li> </ul>	



Step	Event	Check (√)
<b>Conducting</b>		
27.	Set up logistics to be used during the exercise activity: <ul style="list-style-type: none"> <li>• Supplies and materials</li> <li>• Equipment</li> <li>• Services</li> <li>• Facilities</li> </ul>	
28.	Conduct briefings with all members of the exercise project team to confirm their roles and responsibilities during the exercise activity.	
29.	Conduct briefings with all participants to confirm their roles and responsibilities during the exercise.	
30.	Conduct the exercise: <ul style="list-style-type: none"> <li>• Start the exercise</li> <li>• Introduce problems</li> <li>• Maintain the exercise</li> <li>• Evaluate activities</li> <li>• End the exercise</li> </ul>	
<b>Evaluating</b>		
31.	Conduct “hot debrief”: <ul style="list-style-type: none"> <li>• With the participants</li> <li>• With the evaluator</li> <li>• Record relevant information</li> </ul>	
32.	Conduct the exercise project team meeting to observe, evaluate, and provide constructive suggestions for further improvement of the exercise project.	
33.	Conduct “cold debrief”: <ul style="list-style-type: none"> <li>• Send participant feedback form to all participants</li> <li>• Collect participant feedback form</li> </ul>	
34.	Develop the final exercise report.	

*Oil and Gas Security-Exercise Model Procedure (OGS-EMP)*

<b>Step</b>	<b>Event</b>	<b>Check (√)</b>
35	Get approval from the exercise program manager for the final exercise report.	
36.	The exercise program manager submits the final exercise report to top management and other relevant organizations.	
37.	Follow up.	

## **Appendix II**

### **Example of an Exercise Plan/Guidebook**

The exercise plan/guidebook can include the following information:

- Objectives
- Scope of security exercise
- Date and venue
- Participants
- Confidentiality clause
- Agenda
- Brief information on oil/gas situation, but not the scenarios
- Roles and responsibilities of the participants

## **Appendix III**

### **Example of Administrative Information**

Administrative information may cover the following:

- Date and venue of the meeting
- Key contacts and the sending of registration forms
- Registration and identification badges
- Opening ceremony of the session
- Social event (if any)
- Coffee breaks and lunches
- Dress code
- Working language

If there are participants or experts from abroad, additional information needs to be included in the administrative information, including:

- Immigration requirements
- Hotel reservations
- Transportation
- Currency
- Local time
- Climate
- Making phone calls/using the Internet
- Electricity and water

Administrative information should be attached to the registration form.

## Appendix IV

### Examples of Participant Responses to an Oil/Gas Emergency Scenario

*(These examples come from the “APEC Oil and Gas Security Exercises: Joint Southeast Asian Exercise” in Bangkok, Thailand, and the “APEC Oil and Gas Security Exercises: Indonesia Exercise” in Jakarta, Indonesia)*

- **Initial Actions**

“What emergency arrangements will your government make in response to the first emergency reports?”

*(You may explain the initial actions your government would take to establish an emergency headquarters and a chain of command, develop information-collection arrangements, cooperate with relevant parties, and provide information to people, as well as the laws and regulations for these actions.)*

- **Assessment of Direct Impact**

“What economic and social implications will your government expect from the supply emergency based on the collected information?”

*(You may explain the economic damage and social turmoil that you project for your economy based on the predicted timing and scale of oil/gas supply drops. The economic damage should be quantitatively estimated as much as possible.)*

- **Basic Stance of the Government**

“What would your government’s top priorities be in considering responses to such an emergency?”

*(You may explain specific priority policy challenges such as energy supply, living-related measures, people’s understanding and security means that your government will tackle based on differences in energy supply/demand, trade, industrial and political/social systems.)*

- **Securing the Energy Supply**

“What energy supply actions will your government take to offset a substantial decline in the energy supply?”

*(You may explain measures such as increasing or obtaining alternative oil and gas sources at home and abroad, releasing reserves, switching to substitutes, and restricting energy exports, as well as their priority order and the possibility of positive government intervention, diplomatic efforts [cargo sharing/allocation and so forth] and regional cooperation to implement these measures.)*

- **Demand-Side Measures**

“What demand-side measures will your government take for each energy consumption sector if no measure can be projected to offset an energy supply drop?”

*(You may consider electricity supply restrictions, fuel switching, manufacturing production curbs, traffic restrictions (e.g., carpooling), consumption restrictions and many other measures. You may explain specific measures, their priority order, their strengths and how to implement these measures. Please quantify the effect of these measures as much as possible.)*

- **Other Points for Consideration**

“In addition to actions responding to the direct impacts of oil and gas supply drops, what considerations and actions will your government undertake in response to indirect impacts and non-energy problems?”

*(The oil/gas supply reduction may bring about not only a quantitative supply fall but also oil/gas price spikes and general energy price hikes. It may also lead to stagnant distribution, daily commodity shortages and price hikes, traffic problems, groundless rumors, social unrest, financial market destabilization, and fiscal turmoil. You may explain specific expected developments, actions your government would take in response to such developments and priorities your government would consider.)*

## **Appendix V**

### **Example of a Final Exercise Report**

*(Based on ISO 22398:2013)*

A final exercise report can contain the following:

- Exercise objectives and scope
- A summary of the participants, resources, exercise location(s), set-up and staging, and activities
- Information related to the preparation and execution of the exercise
- Selection of the method and type of exercise, including scenarios, incidents and injects
- Identification of any exercise process constraints
- Evaluation of the exercise performance, including responses from the participating organization(s)
- Feedback from debrief
- Operational performance, competency and learning experience of participants
- Recommendations for improvements, with assigned responsibilities and completion dates
- Recommendations for the next exercise
- Any limitations regarding the findings or guidance on how the findings should be interpreted
- Conclusions regarding the validity of the exercise

## Appendix VI

### Example of a Participant Feedback Form

*(This example is based on the APEC Project Evaluation Survey and was used during the “APEC Oil and Gas Security Exercises: Joint Southeast Asian Exercise” in Bangkok, Thailand, and the “APEC Oil and Gas Security Exercises: Indonesia Exercise” in Jakarta, Indonesia, with some modifications.)*

- Name of the exercise: \_\_\_\_\_
- Date: \_\_\_\_\_
- Venue: \_\_\_\_\_

**Instructions:** Please indicate your level of agreement with the statements listed in the table below.

	<b>Strongly Agree</b>	<b>Slightly Agree</b>	<b>Agree</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>	<b>Comment (Continue on the back if necessary)</b>
The objectives and scope of the exercise were clearly defined.						
The exercise achieved its intended objectives and scope.						
The agenda items and topics covered were relevant.						
The content was well organized and easy to follow.						
The exercise facilitator or coordinator was well prepared and knowledgeable about the topic.						
The exercise evaluator had good competency and provided good						



recommendations.						
The distributed materials were useful.						
The time allotted for the exercise was sufficient.						

1. How relevant was this exercise to you and your organization?

very	mostly	somewhat	a little	not much
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Explain: \_\_\_\_\_

2. In your view, what were the exercise’s results/achievements?

Explain: \_\_\_\_\_

3. What new skills and knowledge did you gain from this exercise?

Explain: \_\_\_\_\_

4. Rate your level of knowledge and skills regarding the topic prior to participating in the event:

very high	high	medium	low	very low
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5. Rate your level of knowledge and skills regarding the topic after participating in this exercise:

very high	high	medium	low	very low
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6. How will you apply the knowledge you gained and the exercise’s content in your workplace? Please provide examples (e.g., develop new policy initiatives, organize training, develop work plans/strategies, draft regulations, develop new procedures/tools).

Explain: \_\_\_\_\_

7. How could this exercise be improved (if needed)?

Explain: \_\_\_\_\_

Participant's information (identifying information is optional):

- Name: \_\_\_\_\_
- Organization: \_\_\_\_\_
- E-mail: \_\_\_\_\_

