# EPAP Operator's Handbook

## January 7, 2010

Effective June 17, 2013, the Energy Resources Conservation Board (ERCB) has been succeeded by the Alberta Energy Regulator (AER).

As part of this succession, the title page of the existing EPAP Operator's Handbook now carries the new AER logo. However, no other changes have been made to the handbook, and they continue to have references to the ERCB. As a new edition of the handbook is issued, these references will be changed.

Some phone numbers in the directives may no longer be valid. Contact AER Inquiries at 1-855-297-8311 or inquiries@aer.ca.

ERCB

# Production Operations
# Enhanced Production Audit Program

# EPAP Operator's Handbook

Energy Resources Conservation Board

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**ENERGY RESOURCES CONSERVATION BOARD**
ERCB Enhanced Production Audit Program: EPAP Operator's Handbook

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# Contents

# 1 Executive Summary

The Energy Resources Conservation Board (ERCB) has created the Enhanced Production Audit Program (EPAP) to raise the level of assurance over compliance with the ERCB measurement and reporting requirements, and to raise the level of compliance with these requirements.

EPAP has been implemented through *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements*. This directive applies to all operators subject to ERCB measurement and reporting requirements and reporting to the Petroleum Registry of Alberta (PRA). This directive applies to conventional oil, heavy oil, crude bitumen and natural gas facilities, but not mineable oil sands.

Through EPAP, the ERCB aims to reduce its reliance on substantive audits in favour of relying on the effectiveness of each operator's controls over ERCB measurement and reporting requirements. A key aspect of EPAP is that each operator is to submit a formal Declaration regarding the operating effectiveness of their controls in addressing the risk of noncompliance.

This *EPAP Operator's Handbook* is designed to provide assistance to operators in implementing and operating EPAP, including designing and evaluating controls, using and interpreting the Compliance Assessment reports, responding to Action Items, and making the annual Declaration.

## 1.1 Operator Declaration

EPAP requires that each operator's senior executives declare annually as to the state of their infrastructure (i.e. controls) ensuring compliance with ERCB measurement and reporting requirements. The Declaration includes reporting on the existence (or absence) of controls, the extent to which controls have been evaluated, and the degree to which controls have been found to be effective.

Operators are expected to maintain sufficient documentation to support their design and evaluation of controls. While this documentation does not form part of the annual Declaration, it may be requested by the ERCB at any time.

## 1.2 Controls

EPAP recognizes that well-managed operators will already have controls in place to meet a variety of assurance goals. The ERCB encourages operators to leverage relevant existing controls and evaluation procedures for EPAP purposes and to extend their control structures and environments to cover all measurement and reporting requirements.

A core component of EPAP is the reliance placed on the operator's best judgment in determining whether their controls adequately address the risks of noncompliance.

## 1.3 Compliance Assessment

EPAP conducts continuous monitoring of data submitted to the ERCB relating to measurement and reporting requirements and provides monthly reports of indicators to all operators. An operator's attention to these indicators is expected to result in continuous improvement in their level of compliance and so help in the management of their operations.

# 2 Introduction

The Energy Resources Conservation Board (ERCB) has changed the process for auditing oil and natural gas data submitted by operators in the Province of Alberta to meet measurement and reporting requirements. The new audit program is called the Enhanced Production Audit Program (EPAP).

EPAP has been designed to take advantage of current audit best practices and to make the process of auditing an operator's measurement and reporting practices more cost-effective and sustainable for both the ERCB and the industry.

EPAP has been implemented through *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements*. This directive applies to all operators subject to ERCB measurement and reporting requirements and reporting to the Petroleum Registry of Alberta (PRA). This directive applies to conventional oil, heavy oil, crude bitumen and natural gas facilities, but not to mineable oil sands.

EPAP is administered at the ERCB by the Production Audit Team (PAT).

## 2.1 EPAP: The new approach

The model followed by the ERCB in the design of EPAP follows already-established Canadian and US standards by which publicly-traded corporations provide assurance over the effectiveness of controls relating to financial reports and corporate disclosures. These standards highlight the importance of corporate ethical standards.

The ERCB believes that EPAP produces a number of benefits for both operators and the ERCB. EPAP is expected to increase the level of assurance operators can provide over compliance with measurement and reporting requirements for many assurance purposes. Moving away from the ERCB-conducted substantive audits towards operator-conducted evaluations of controls saves operators significant resources consumed by resource-intensive substantive audits. This new approach is also expected to help the operators avoid the costs associated with enforcement activities initiated through the *Directive 019: Compliance Assurance—Enforcement* process. Further discussion of benefits appears in Appendix VI of this Handbook.

## 2.2 Expectations for Operators

A key component of EPAP is the Declaration process, in which the operator's senior executives declare they have designed and evaluated controls (see Section 5) over ERCB measurement and reporting requirements and have, in case deficiencies in addressing the risks of noncompliance are found, taken steps to remediate the deficiencies.

The Declaration is supported by documented evidence of the procedures and controls in place to address the risks of noncompliance related to ERCB measurement and reporting requirements.

## 2.3 What's in this Handbook?

To support operators' efforts to comply with the requirements of *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirement*, the *EPAP Operator's Handbook* includes such topics as the following.

1) The expectations of the ERCB with regards to the level of assurance over compliance with ERCB measurement and reporting requirements, as well as definitions of

    - reasonableness – what constitutes reasonable efforts in implementing controls over ERCB measurement and reporting requirements?
    - materiality – whether materiality is applied in implementing controls over ERCB measurement and reporting requirements?
    - scope – what is in scope when implementing controls?

2) What to consider in designing controls, including

    - how to identify risks associated with ERCB measurement and reporting requirements,
    - how to determine if a risk should be addressed through a company-level control, operating area-level or a facility-level control,
    - how to design controls to mitigate identified risks, and
    - how to identify and mitigate residual risks.

3) How to evaluate the effectiveness of controls, including

    - a definition of ERCB expectations for the evaluation's depth and breadth and for the persons responsible for performing it,
    - planning and conducting an evaluation,
    - using different evaluation tools, and
    - relevant examples to serve as a guide.

4) How to maintain the design of controls to ensure their continued effectiveness in addressing risk of noncompliance relating to ERCB measurement and reporting requirements.
5) How to implement EPAP, and use it for continuous improvement, year after year.
6) How to interpret and use the Compliance Assessment reports to identify and track issues.
7) How to make your annual Declaration.

A Glossary at the end of this Handbook provides definitions for key words and phrases.

The *EPAP Operator's Handbook*, with its supporting examples, is not an ERCB Directive and does not prescribe specific actions or steps regarding the design, implementation or evaluation of controls. Operators are expected to use the guidance presented in the *EPAP Operator's Handbook* in conjunction with their professional skills, knowledge of controls and good judgment in the design, implementation and evaluation of controls.

The suggestions and recommendations contained in the *EPAP Operator's Handbook* have been developed based on principles of internal audit, incorporating elements from existing

financial-based control frameworks that apply to publicly-traded companies. The aim is to allow operators

- to leverage their existing control programs to implement and evaluate controls relating to ERCB measurement and reporting requirements, and
- to effectively design and implement controls using generally accepted practices based on well-established control frameworks.

### 2.4 Correcting and Enhancing this Handbook

Should you find an error in this handbook, we would greatly appreciate your bringing it to our attention. Similarly, if you can suggest improvements in coverage or clarity, we would appreciate hearing about those, too. Please send your feedback to epap@ercb.ca.

## 3 Implementing EPAP

This section presents an overview of proposed operator activities in implementing EPAP, to be followed prior to the first Declaration.

| Implementation Task | More Details found in |
|---|---|
| 1. Understand EPAP requirements goals and expectations. | Section 4 in this handbook and *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirement*s |
| 2. Understand controls, including<br>• the business processes involved in measurement and reporting,<br>• what controls are,<br>• the nature and different types of controls,<br>• the frequency of the control execution,<br>• the role of control performer, and<br>• the methods for documenting controls. | Sections 5 and 7.3 in this handbook |
| 3. Determine who is to be involved in ensuring EPAP success and what their roles and expectations on them will be<br>• Communicate the EPAP requirements and expectations to your senior management and to other relevant members in your organization. | |
| 4. Prepare for your Trial Declaration<br>• Determine the Declaration period (if only tentatively, it can be changed). | Appendix VI (section 23) in this handbook |

| Implementation Task | More Details found in |
|---|---|
| • Identify, with the Declaring executives, the supporting material that will be required at the time of signing.<br>• Draw up the plan for what has to happen before the Trial Declaration (decide what has to be done, who is to do it, when it is going to happen).<br>• Communicate preferred Declaration period to the PAT member. | |
| 5. Determine applicability of themes (or noncompliance events) to the facilities<br>• Print list of themes and underlying noncompliance events from the EPAP system; review theme descriptions and suggested controls.<br>• Print list of Facilities by Type and Subtype from PRA.<br>• Inventory exemptions obtained from ERCB for specific facilities. | Section 6.2 in this handbook |
| 6. Identify or Design controls<br>• Review work of IMG and CAPPA on suggested best practices.<br>• Identify any existing control activities that effectively address some or all risks of noncompliance.<br>• Identify if there are any existing audit procedures, not related to EPAP, performed internally, by independent third parties engaged by operators or by other external parties which may provide assurance over compliance with EPAP requirements. In the context of EPAP, these procedures may be treated as controls.<br>• Identify unaddressed risks of noncompliance.<br>• Design new controls for the remaining risks of noncompliance. | Sections 7.1 and 7.2 in this handbook |
| 7. Determine level at which key controls operate for specific facilities for each theme | |
| 8. Use the Compliance Assessment Report to highlight areas of concern. | EPAP system help menu |
| 9. Evaluate controls<br>• For controls that are found to be deficient during the evaluation, determine whether there are any compensating controls.<br>• Controls that are deficient can be either fixed and re-evaluated or reported to the ERCB through the | Section 10.1 in this handbook |

| Implementation Task | More Details found in |
|---|---|
| Declaration process. | |
| 10. Document business processes, controls, evaluation procedures and any results of evaluations<br>• Include any assumptions, judgments or decisions applied during the design and evaluation of controls. | Section 10.7 in this handbook |
| 11. Test Declaration approval process<br>• Compile supporting documentation<br>• Present to senior executives and obtain signatures<br>• Submit Trial Declaration | Appendix VI (section 23) in this handbook |
| 12. Receive PAT feedback on the Trial Declaration | Appendix VI (section 23) in this handbook |
| 13. Revise plans, if necessary, for the next Declaration.<br>• Consider scope, coverage, timing, evaluation procedures and documentation standards.<br>• Review presentation and review processes for signing executives. | |

# 4 Interpretation and Application of the Directive

## 4.1 Scope of EPAP

EPAP applies to all ERCB measurement and reporting requirements contained in various ERCB Directives and regulations primarily, but not exclusively, *Directive 007: Volumetric and Infrastructure Requirements* and *Directive 017: Measurement Requirements for Upstream Oil and Gas Operations*.

It is the responsibility of operators, under EPAP, to implement controls that allow them to either prevent or detect, in a timely manner, noncompliance with these ERCB measurement and reporting requirements.

Operators are to plan and perform evaluations of controls to obtain a reasonable level of assurance that the controls implemented are effective in mitigating the risks of noncompliance. The evaluation of controls includes an evaluation of the design as well as an evaluation of the operating effectiveness of the controls. Any deficiencies identified during the evaluation of controls in addressing the risk of noncompliance are to be reported in the Declaration.

These evaluations of controls are expected to provide a reasonable level of assurance over compliance with ERCB measurement and reporting requirements.

As stated in *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements*, operators are to maintain sufficient evidence about the design and operating

effectiveness of controls over the risks of noncompliance. This documentation is to be provided to the ERCB upon request to an operator.

## 4.2 What is a Declaration?

The Declaration is an attestation, submitted annually by an operator's senior executives, whereby they declare that they

- are responsible for designing and maintaining controls over ERCB measurement and reporting requirements,
- have identified the ERCB measurement and reporting requirements for which they do not have controls, and explained why having no controls is appropriate,
- are responsible for the evaluation of the effectiveness of the controls over ERCB measurement and reporting requirements, and
- have committed resources to remediate the deficiencies identified during the evaluations.

The wording of the Declaration is available as an appendix to the *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements*.

Based on the data the operator enters into the EPAP system, the system will provide as attachments to the Declaration,

- a summary of the results of the evaluation of controls, and
- a list of those measurement and reporting requirements not addressed by controls.

Appendix II in this handbook contains examples of these attachments.

## 4.3 Declaring Executives

The Declaration is to be reviewed and signed by one or more senior executives with provincial authority for field operations and production accounting. For many operators, these will be the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO) of the operator.

Some operators, however, will have only one individual serving as both the CEO and CFO; other operators may have to involve more than two executives in order to cover all of the responsible functional areas. Each operator is to determine for themselves how many and which executives to involve in signing the Declaration. A key criterion is that, taken together, the signing executives are to have authority over all field operations and production accounting activities of the operator in the province of Alberta.

Declaring executives who assume office during the declaration period are responsible for their entire declaration. Under these circumstances, confidence may be built by

- Reviewing the evaluation of controls work plan for the year
- Ensuring that evaluations of controls have occurred or are occurring

- Ensuring that remediation work has occurred or is occurring

## 4.4 Multiple licensee facilities

The Operator of Record for a facility, as shown on the PRA, is responsible for declaring for the entire facility, even when another licensee operates some portion of that facility. It is, therefore, up to Operator of Record to assure themselves that all licensees that operate a portion of their facilities are doing so in compliance with ERCB measurement and reporting requirements. Specifically,

- the Operator of Record is to include the entire facility within the scope of their declarations;
- the Compliance Assessment Report associates all compliance assessment indicators for a facility with the Operator of Record.

In following this approach, EPAP is not introducing change from the current practice in effect in other areas of the ERCB.

If an Operator of Record is not willing or not able to assure themselves that all licensees that operating portions of their facilities are in compliance with ERCB measurement and reporting requirements, the alternative courses of action are as follows:

1) The Operator of Record assumes operatorship of the entire facility and the other licensees become non-operating joint venture partners.
2) The other licensees invest in the components required to operate under separate facility codes.

The second alternative is viewed as undesirable by the ERCB because it requires avoidable investments, it adds to the proliferation of facilities, and it may adversely affect land owners.

## 4.5 EPAP and the Freedom of Information and Protection of Privacy Act

EPAP data may be the subject of a request for information pursuant to the Freedom of Information and Protection of Privacy Act (FOIPPA). The ERCB does not believe it has a basis for denying any such requests.

For the purposes of FOIPP, EPAP data includes

- Declarations with attachments,
- Action items including remediation plans,
- Voluntary self-disclosures and remediation plans, and
- Compliance Assessment Reports.

### 4.6 The Compliance Assessment process

Compliance Assessment is a monthly process of data analysis, undertaken by the PAT auditors, in an attempt to identify the possible occurrence of noncompliance events. The primary data source for this process is, of course, the PRA data, but other sources are included as appropriate. The results of this process are expressed as Compliance Assessment indicators, conditions found in the data which, while not in themselves noncompliance events, suggest that a noncompliance event may have occurred.

## 5 Understanding controls

Operators are expected to design controls to address the risk of noncompliance at all operated facilities, regardless of the perceived significance of the facility, the risk of noncompliance, or the potential impact of an occurrence of noncompliance.

In the context of EPAP, a control is a process designed to provide a reasonable level of assurance that the underlying business process ensures compliance with ERCB measurement and reporting requirements.

- A control is a process designed to provide assurance that some other or larger process (one of which is a part) is performed to the required standards. It does not by itself advance the business process.
- Controls are executed by and involve people. They are not merely policy manuals or forms, but depend on people at every level of the organization.
- Typically, the goals of controls are the prevention of noncompliance events or the timely detection of noncompliance events.

### 5.1 Control Environment

A control environment is the atmosphere in the organization established by the senior management in response to the needs of the organization in addressing regulatory requirements, internal risks and external risks. This can be accomplished by

- developing effective organizational structure that defines authority and responsibility;
- communicating management's philosophy and operating style to all the employees;
- enhancing integrity, ethics, and competence of all the employees;
- managing effectively the external influences that affect the operator's operations and risk management practices; and
- establishing effective human resources policies and procedures for hiring and managing the employees.

An appropriate control environment is necessary to ensure the effective functioning of a control. An effective control environment does not, by itself, provide a reasonable level of assurance that any of the risks identified will be addressed and managed. An ineffective

control environment can, however, undermine an operator's controls, policies and procedures.

## 5.2 Business processes and controls

A business process is a collection of related and structured tasks performed to achieve the objectives of the organization. A control process is designed to ensure the effectiveness of the business process.

An evaluation of controls is performed to assess the effectiveness of a control.

The following diagram identifies the relationships among the business process, the control process and the evaluation of control.

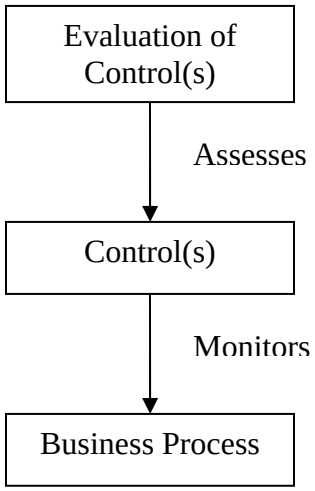


Figure 1: Relationship of Controls to Business Processes

Controls vary in nature (company-level, operating area-level or facility-level), type (automated or manual, preventive or detective) and frequency (transactional, daily, weekly, monthly or annually).

## 5.3 Nature of controls

The nature of the controls implemented by an operator could be different at various facilities depending on the perceived risk of noncompliance and materiality of those facilities. A control can be a facility-level control, an operating area-level control or a company-level control, determined by where the control operates, not by where it was designed nor by how widely it is used.

Some requirements are more demanding than others. More demanding requirements are addressed through more rigorous business processes, more stringent controls and more comprehensive evaluation procedures. These requirements are less likely to be addressed by company-level controls.

To decide on the nature of control, an operator may adopt a top-down risk-based approach. These concepts are explained in the sections below.

### 5.3.1 Top-down risk-based approach

To effectively and efficiently address the risk of noncompliance, an operator could adopt a top-down risk-based approach in the implementation of controls.

A top-down risk-based approach begins with an operator identifying the risk of noncompliance by obtaining an understanding of the facility characteristics including the following.

- Production volume: is the production volume high, moderate or low relative to the operator's total production?
- The number of fluids being produced: does the facility produce only oil, gas and water or are liquid petroleum gas, condensates and sulphur also being produced?
- Structure and complexity: does the facility receive from and deliver to multiple points, or does the facility inject as well as produce?

When multiple facilities of varying sizes are being operated, a risk-based approach helps operators to

- identify the risks that could reasonably result in noncompliance,
- consider the impact and likelihood of these risks.

Once the risks have been identified by an operator, the next step is to take a top-down approach to design and implement controls. Under this approach, the operator could begin by identifying and implementing company-level or operating area-level controls to address the risk of noncompliance. If the risk of noncompliance can be adequately addressed by company-level or operating area-level controls, then the operator may not require facility-level controls.

For higher impact risk of noncompliance that cannot be addressed by a company-level or an operating area-level control, the operator would design facility-level controls.

### 5.3.2 Facility-level controls

Facility-level controls are designed to operate at the facility level. A facility-level control may apply to a specific facility only or the identical control may be independently operated at many similar facilities. These are appropriate controls in, for example, the following situations.

- A facility is contributing a material production volume relative to the overall production volume being reported by an operator. The controls include, a facility-specific balancing control because the facility receives significant production from multiple sources.
- The risk of noncompliance is high enough as to be considered materially significant. The controls may include rigorous monitoring of flare volumes due to significant $H_2S$ content of the gas.

- The nature of the risk of noncompliance is such that it can be adequately addressed only by a facility-level control. The control may include detailed procedures for managing significant trucked-in volumes unique to this particular facility.

Facility-level controls may vary in nature and level of precision. For an example of a facility-level control, please refer to Appendix IV (Process Documentation Examples), Example 1 (Meter Calibration Process).

### 5.3.3 Company-level controls

Company-level controls are designed to operate company-wide. A Company-level control applies to many or all of an operator's facilities. These are appropriate controls where

- facilities are not contributing a material production volume relative to the overall production volume being reported by the operators, and

- the impact of the risk of noncompliance is minimal.

Company-level controls may vary in nature and level of precision and could include

- Controls related to the organizational culture – these have an indirect effect on the likelihood of a noncompliance. These controls include, for example, hiring personnel with adequate training and experience in facility operations to perform the control activities.

- Controls for monitoring other controls – these help in identifying breakdowns in other controls, such as facility-level controls, but are not themselves designed to directly address the risk of noncompliance. These controls include, for example, activities of the audit function and self-assessment programs.

- Controls used for centralized processing – these typically exist in shared service environments. These controls include, for example, certain information systems controls related to production accounting, field data gathering and field operations.

- Controls to monitor results of operations – these might be designed to operate at a level of precision that would adequately prevent or detect on a timely basis one or more noncompliances. If a company-level control operates at this precision, the operator may not require additional facility-level control relating to that noncompliance. These controls include, for example, reporting by production accounting, joint venture accounting, finance and operations of dispositions, receipts and inventories.

The examples provided here do not constitute a complete list but are meant to illustrate the types of controls that could be in place at the company level to address the risk of noncompliance.

### 5.3.4 Operating area-level controls

For the purposes of logical and field-effective field operations, an operator may group facilities described by multiple ERCB facility codes. Under these circumstances, the operator may wish to design, operate and evaluate operating area-level controls. An operating area-

level control applies to many or all of an operator's facilities in the operating area. These controls are considered to exist between facility-level and company-level controls.

## 5.4 Manual / Automated controls

**Manual / automated controls** - Some controls may be manual while other controls are automated. Automated controls are seen as stronger and produce more comprehensive and cost-effective results. However, an efficient and effective control environment typically uses a combination of both manual and automated controls.

Operators should not focus on the use of one over the other but rather on ensuring that the risks of noncompliance are adequately addressed.

1) **Manual control -** Please refer to the example provided in Appendix IV (Process documentation examples), Example 1 (Meter Calibration process) for an illustration of a manual control.

2) **Automated control** - The following is an example of an automated control.

   Risk of noncompliance: Delivery point hydrocarbon liquid meas. device(s) does not exist, is not installed correctly, or not in use.

   Control objective: To ensure delivery point meter is installed correctly and is in use.

   Control description:

   An operator measures delivery of hydrocarbon from a battery to the pipeline receipt point. The check meter and the receipt point custody transfer meter send the volume readings to the facility where the SCADA system compares the readings continuously to ensure the volume readings are within the variance tolerance.

   In instances where the system detects readings that are outside the variance tolerance, the system automatically warns the Field Operators of the variance in volume readings by a pop-up screen when the Field Operator logs into the system. The operator then investigates the cause of the variance and takes corrective actions.

3) **Combination of manual and automated controls** - To maintain efficient and effective controls, operators may adopt a combination of both manual and automated controls. An example of a combination of manual and automated control is as follows:

   Risk of noncompliance: Inaccurate accounting and reporting of proration factors.

   Control objective: To accurately calculate and report proration factors.

   Control description:

   Proration Factors are generated, by fluid type and facility, within the Production Accounting System on a monthly basis.

   Once a month, on the day after proration factors are generated, an automated query is run in the Production Accounting System to detect all instances of proration factors that are either outside the acceptable ranges applicable for all types of proration batteries or are 1.0.

   The Production Accounting System then automatically

   - Creates a file containing such instances

- Emails this file to the Production Accounting Team Lead (or Manager).

The Production Accounting Team Lead / Manager, the control performer, receives the automated emails from the Production Accounting System on a monthly basis and:

- Manually reviews the system report,
- Ascertains reasons why proration factors are outside the acceptable ranges, and
- Follows up with the appropriate personnel to ensure correction of identified issues, if required.

On an annual basis, the Production Accounting Team Lead/Manager reviews the edit check parameters in the Production Accounting System to ensure consistency with relevant ERCB Directives.

## 5.5 Preventive / Detective controls

**Preventive / Detective controls** - Some controls prevent errors while others detect their occurrence. Preventive controls are seen as stronger; however, an efficient and effective control environment uses a combination of both preventive and detective controls.

Operators should not focus on the use of one control over the other but rather on ensuring the risks of noncompliance are adequately addressed.

1) **Preventive controls** - The following is an example of a preventive control:

Risk of noncompliance: Gas composition and density not updated.

Control objective: To ensure gas densities are updated as required.

Control Description:

Table 8.3 in ERCB Directive 017 sets out the sampling and analysis frequency for meters at various types of facilities. This sampling and analysis frequency ensures that flow calculations are based on current data, increasing the accuracy and completeness of volumetric data reported to the PRA. Timely entry of the results of updated analyses into the flow calculation system is important in ensuring gas volumes are calculated correctly.

Once a month, the Measurement Lead – the control performer – creates a listing of all facilities and schedules sampling and analysis for each meter at every facility based on the requirements. The Measurement Lead

- identifies all meters scheduled for sampling and analysis during the month,
- e-mails this list to the Facility Supervisors as a reminder to ensure the sampling/analysis is carried out and the system is updated, and
- follows up to ensure action was taken.

2) **Detective controls** - The following is an example of a detective control.

Risk of noncompliance: Inaccurate well status.

Control objective**:** To ensure well statuses are accurately reported on the PRA.

Control Description:

The ERCB requires each operating well to be associated with a valid and correct well status.

On a quarterly basis, the Field Foreman – the control performer – generates a report, based on PRA well infrastructure data, identifying the status and status effective date associated with each well.

During the review of this report, the Field Foreman determines if

- the well status corresponds to the activity in the field, and
- the effective date of the status is correct.

When instances where the well status is incorrect have been identified, the Field Foreman

- communicates this information to the Production Accountant(s) in charge of the wells to ensure corporate systems and PRA are corrected, and
- follows up to ensure action was taken.

## 5.6 Frequency of controls

A control can be daily, weekly, monthly, quarterly, yearly or on a transactional basis depending on the occurrence of the business process.

Ideally the frequency of the control operation is same as that of the underlying business process. The frequency of control operation may be slightly less than that of the underlying business process but not significantly less.

Many ERCB measurement and reporting requirements specify a time period. In general, these requirements determine the control frequency.

For example, the gas meter calibration is to be carried out on a semi-annual basis, if the meter is used in a gas plant or for sales/delivery point. In this example, because the ERCB requirement occurs every six months, the frequency of the control should occur once every six months.

## 5.7 Inherent limitation of controls

The belief that controls over risks of noncompliance ensures absolute compliance with ERCB measurement and reporting requirements is unwarranted. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute assurance, to an operator's senior executives (and, in turn, to ERCB) regarding achievement of compliance with ERCB measurement and reporting requirements. The likelihood of achievement is affected by limitations inherent in all control systems. These include the realities that

- judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake,
- two or more people can act together to circumvent controls,
- management may have the ability to override controls,
- the design of a control system reflects the fact that there are resource constraints, and the benefits of controls should generally be considered relative to their costs, and

- a control cannot change an inherently poor manager / supervisor into a good one.

Thus, while controls can help an operator achieve reasonable level of assurance over compliance with ERCB measurement and reporting requirements, they are not a guarantee and need to be regularly evaluated for effectiveness to be of any value to the operator.

# 6 Planning for design of controls

For planning the design of controls, an operator may group the facilities and assign the risks of noncompliance to the groups. Based on the applicability of the risk of noncompliance, the operator may design company-level, operating area-level or facility level controls, manual or automated controls, preventive or detective controls. These concepts are explained in detail in the sections below.

## 6.1 Grouping of facilities

To design controls that adequately address risks of noncompliance at facilities, an operator may consider grouping facilities that have similar characteristics and risks.

Grouping facilities in terms of characteristics and risks assist operators in designing controls that are consistent across facilities with similar characteristics and risks.

The term “design” in this context generally includes both developing and implementing controls.

### 6.1.1 Considerations of Risk and Impact

As noted in section 4.3.1 of this Handbook, operators may use a top-down risk-based approach to risk group their facilities and design effective controls. To assess the risk at each facility, an operator would assess the facilities being operated based on

- the elements of risk that can be identified and measured at each facility.
- the impact of the identified risks in the operator’s ability to comply with ERCB measurement and reporting requirements.

The elements of “Risk” would include such characteristics as the following.

- The nature of the production at the facilities.
- The complexity of the production facilities.
- The location and accessibility of facilities.
- Age of production facilities.

The elements of “Impact” would include such characteristics as the following.

- The actual production volume of the facility.
- The production volume of the facility as a percentage of the operator’s overall production volume.

- The estimated remaining reserves of the reservoir.
- The number of measurement devices at the facility.
- The hours on production at wells linked to the facility.
- The $H_2S$ content in the raw gas stream at the facility.

In addition to these suggested characteristics, an operator may use any other criteria that would enable the effective identification of material risk at the facilities.

### 6.1.2 Classifying facilities

By considering the qualitative and quantitative characteristics of the facilities, an operator may classify facilities in terms of groups based on pre-determined criteria that are appropriate to the operator's own needs and circumstances.

The resulting groups of facilities indicate the type of controls that may be appropriate to address the risk of noncompliance, whether they are facility, operating area or company-level controls.

For example, based on an assessment of the facilities' characteristics an operator may decide to group them in terms of facility type, with three classes of facilities, as shown below.

| Classification of Facilities | | |
|---|---|---|
| Facilities Class 1 | Facilities Class 2 | Facilities Class 3 |
| Likely to require facility-level controls | Likely to require facility-level, operating area-level and company-level controls | May require few facility-level controls |
| May require some operating area-level controls | | Likely to require some operating area-level controls |
| May require few company-level controls | | Likely to require company-level controls |

These groups help the operator in determining the type of controls needed. It is important to note it is up to each operator to determine the number and nature of facility groups.

There are two benefits to creating groups like this.

1) Having groups maximizes the number of facilities at which a control can be implemented which increases standardization in the control environment.

2) Having groups minimizes the number of unique controls that need to be designed which, in turn, minimizes the cost to design the control environment.

## 6.2 Assign risks of noncompliance to facilities

In the context of EPAP, operators are required to design controls over specific ERCB measurement and reporting requirements. Using the ERCB list of Themes and associated noncompliance events, operators are to determine which Themes are applicable to facilities where the operator is shown as the Operator of Record in the PRA. Although a noncompliance event may be applicable to a particular facility sub-type, the event may not be applicable to a specific facility. (For example, stock tank vapours are to be accurately

accounted for at all facilities with tanks; however, this volume of gas would only be reported as vented at facilities without a vapour recovery unit.)

For example, Operator XYZ is responsible for reporting to the PRA for five facilities and should determine which of the ERCB noncompliance events apply at each of the facilities.

- Noncompliance A – Inaccurate determination of estimated hydrocarbon liquid production.
- Noncompliance B – ECF inaccurately determined and to required frequency.
- Noncompliance C – Gas meter(s) does not exist, is not installed or used correctly, or is not in use.
- Noncompliance D – Inaccurate reporting of vent gas.
- Noncompliance E – Injection/disposal meas. device(s) does not exist, is not installed or used correctly, or not in use.

Table below illustrates the applicability of each noncompliance event to the five facilities of Operator XYZ

| Facility Reference (for illustrative purposes only) | Sub-type | Noncompliance event applicability | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | E |
| ABBT 0012345 | 322 (crude oil multi-well proration) | Yes | No | Yes | No | No |
| ABBT 0023456 | 311 (crude oil single) | No | No | Yes | Yes | No |
| ABBT 0034567 | 361 (gas multi-well group) | No | No | Yes | Yes | No |
| ABBT 0045678 | 362 (gas multi-well effluent) | Yes | Yes | Yes | No | No |
| ABIF 0002345 | 503 (disposal – water) | No | No | No | No | Yes |

The end result of this process is a table of all the risks of noncompliance that apply to each operated facility.

This information together with the facility classification serves as a good indicator of the type and nature of control that is appropriate to address the risk of noncompliance.

### 6.3 Risk rank applicable risks of noncompliance

Operators may use the ERCB Risk Assessed Noncompliances list (available on the ERCB website) to determine the risk of applicable noncompliance at the facilities.

The ERCB Risk Assessed Noncompliances are categorized as either low-risk or high-risk noncompliances through the ERCB's risk assessment process. Operators may consider these rankings in designing appropriate controls.

## 7 Designing and documenting controls

After planning the design of controls, operators should design and document controls. These concepts are defined below.

### 7.1 Identify existing controls

Control activities may already exist that effectively address some or all the risks of noncompliance. To prevent duplication of work, it is important for an operator to identify the existing controls assess whether they adequately address the risk of noncompliance before designing new controls.

Existing controls can be identified by examining business processes and focusing on steps that may be controls that address or mitigate the risks of noncompliance. Examining business processes may include

- making inquiries with appropriate management, supervisory and staff personnel;
- inspecting company documents, such as process maps, procedure manuals and existing control documentation;
- observing the execution of business processes; and
- tracing procedures and documentation through the information systems relevant to measurement and reporting.

### 7.2 Design new controls

In the event there are no existing controls or the existing controls are not effective in detecting or preventing noncompliance, the operator is responsible for implementing new controls to effectively address the risk of noncompliance.

### 7.3 Document controls

Declaring executives should use their judgment to determine the extent and form of documentation. To provide reasonable support for the Declaration related to the design of controls, an operator should generally document both the risk assessment process and the results and conclusions of the evaluation of controls.

For an operator to document controls, the business processes associated with risks of noncompliance need to be documented first. The operator needs to complete documentation that

- enables a reasonable, knowledgeable individual to understand each business process and related controls;
- provides context to the controls so that a reasonable person would understand their function;

- details the operation of controls, such as identifying who is performing the control, when the control is operating and at what frequency, how the control is performed, and which inputs and outputs are used to in the operation of the control; and

- overall, enables a reasonable person to have a basis upon which to assess the design of controls.

### 7.3.1 Control Matrix

The document that contains the relevant information about the controls like, control number, risk of noncompliance, control objective, control description, control performer, frequency of the control, control evidence, nature of control (company-level, operating area-level or facility-level), type of control (preventive or detective, automated or manual), evaluation procedures and sample is generally known as the control matrix.

Documentation may take different forms such as paper and electronic documents, and could be presented in different ways such as policy manuals, process models / maps, flowcharts, job descriptions, memoranda, forms and matrices depending on size and complexity of the facility.

1) Business process documentation

   - Flow charts - typically document the business process using flow chart applications such as Visio. This method of documentation clearly identifies entire flow of the process, risks in place and controls that exist or designed to mitigate the risks. A well designed flow chart may clearly communicate the process owners who own the process and control performer who is responsible for performing the control.

   - Narratives - typically document the business process using narrative style using MS Word. Narratives clearly explain the business process in required number of words. The main difference between flow charts and narratives is visual presentation adopted by flow charts. Rest of the information contained in flow charts, may also present in the narratives by way of description of the process in words.

2) Controls documentation

   - Control Objective - a control objective describes the outcome of the control in terms of mitigating the risk of noncompliance. Generally, the objective of a control is to prevent the occurrence of the noncompliance event.

   - Control description - a control description outlines the actions, process owners, frequency and other relevant information that describes the control. It is usually worded such that a direct correlation can be made between the noncompliance event and the control objective.

   - Frequency of the control - frequency can be either, daily, weekly, monthly, quarterly, yearly or on a transactional basis. Frequency generally depends on the ERCB Directive requirements.

   - Control performer - name and title of the individual who performs the control.

- Nature of control - control can be a company-level, operating area-level or a facility-level control.

- Types of control - control can be manual or automated, preventive or detective depending on circumstances of each case.

- Control evidence - evidence should generally be sufficient to provide reasonable support that the control is being performed as intended. Evidence may vary in nature and level of precision depending on the risk of noncompliance and the nature of the control. Evidence could take the form of reports, both paper and electronic, as well as interview minutes, statements, forms or internal memos.

Please see documentation examples in Appendix IV.

Maintaining sufficient documentary evidence is important because the ERCB may request an operator to submit the documentation as evidence of the design of control as part of EPAP operation and ERCB enforcement.

### 7.4 Assess residual risks

To ensure that the risk of noncompliance is adequately addressed by appropriate controls, and to minimize residual risk, operators may map each risk in the list of risks of noncompliance to the controls that are designed. The relationship of controls to risks of noncompliance could be expressed as

- One-to-one: One control could adequately address one specific risk of noncompliance without the need of additional controls.

- One-to-many: One control can adequately address multiple risks of noncompliance at the same time. This relationship especially applies when different facilities have similar characteristics and share the same risks of noncompliance, or where several risks of noncompliance share similar characteristics such that a single control is effective in addressing all the risks.

- Many-to-one: More than one control is required to address a risk of noncompliance. This relationship may include the implementation of more than one facility-level, operating area-level or company-level control or a combination. This relationship is applicable in cases where one control cannot adequately address the risk of noncompliance.

Mapping controls to risks of noncompliance could aid an operator in identifying

- risks of noncompliance that are not addressed by any control, and

- risks of noncompliance that are inadequately addressed.

Under these circumstances, an operator may implement new controls to address the residual risks or may apply to the ERCB for an exemption.

### 7.4.1 Exemptions

Identifying risks of noncompliance that are not addressed or not adequately addressed by controls does not necessarily imply that operators should implement new controls. There are instances where:

- The likelihood of a risk of noncompliance occurring is low enough that operators are willing to accept the risk of not having adequate controls.
- The cost of implementing controls outweighs the potential benefits derived from having controls.

In these instances an operator may apply to the ERCB for an exemption. Exemptions are considered and approved by the ERCB based on the validity and completeness of the proposal submitted by the operator. Refer to section 5.2 of the *Directive 017: Measurement Requirements for Upstream Oil and Gas Operations* for a description of the exemption application process.

## 8 Operation of controls

To produce value, controls should generally be operated. If the design of the controls has been reasonably well documented and that the documentation is readily available to the control performers, controls can be operated as intended.

Some considerations that helps ensure effective operation are given below.

- Do the control performers possess the requisite skills and experience to operate the controls?
- Are the control performers aware of the responsibility to perform the control and the specific steps required to effectively perform the control?
- Do the control performers need training that covers performance steps to improve their effectiveness?
- Are the control performers aware of the responsibility of performing the control on a consistent basis throughout the Declaration period?
- Would providing some peer support to control performers improve effectiveness of the performance of the control performers?

This list of considerations helps the senior executives of the operators to ensure that the controls that are designed are being operated successfully.

Apart from these considerations, the operators may consider performing a control self-assessment to reasonably assess the operation of the control.

### 8.1 Control self-assessment

Control self-assessment (CSA) is a technique that allows the employees of the operator, who are directly involved in performing the controls and / or underlying business processes, to

participate in assessing the controls to ensure that they are performing to comply with ERCB measurement and reporting requirements.

There are three aspects to the CSA process:

1) performance of self-assessment,

2) understanding results, and

3) actions performed, as required, based on the results.

Operators may consider CSA as a low-cost precursor to the evaluation of controls process

- to identify control deficiencies requiring remediation; and
- to ensure controls are being executed and adequately address the risk of noncompliance to pre-empt a deficiency finding from the eventual evaluation of controls.

CSA is not a substitute for the evaluation of controls process. However, if what an operator labels as a CSA is performed by a person other than the control performer, either an employee of the operator or an independent third party who is qualified to perform an evaluation of controls by virtue of knowledge in auditing, production accounting and / or measurement, and such evaluation corresponds to the description of evaluation process as explained in this Handbook, then the operator may treat that work as evaluation of controls and report it appropriately in the Declaration.

## 9 Planning the evaluation of controls

Planning for evaluation of controls enables an operator to focus on areas that require more attention and ensures optimum utilization of limited resources.

The key determinant of an adequate plan for the evaluation of controls is that the plan is comprehensive enough, if properly executed, to provide the declaring executives with the confidence to sign the declaration. A key assertion of the declaration is that the operator has achieved a reasonable level of assurance over compliance across all the facilities.

Please note that the previous sentence does not say that the operator has achieved a reasonable level of compliance across all the facilities. A reasonable level of compliance is achieved as a consequence of completing the remediation work that arises from the deficiencies identified during the evaluations of controls.

### 9.1 Control environment considerations

When planning an evaluation of controls, an operator may take into consideration the following factors that influence the control environment.

- Attributes related to the operator’s business including its organization, operating characteristics, number of facilities, type and complexity of production.
- The extent of recent changes, if any, in the operations, policies or procedures that relate to measurement and reporting requirements.

- Control deficiencies previously detected.
- Technological changes.
- Regulatory changes.
- Effects of mergers and acquisitions.

## 9.2 Who should perform the evaluation

The individuals performing the evaluation should have the appropriate knowledge and ability to complete the evaluation procedures they perform. Employees or third parties, ultimately supervised by the senior executives making the Declaration, may conduct the design and evaluation of the operator's controls.

The operator's senior executives should ensure that the evaluations are performed with the appropriate level of objectivity. Generally, the individuals who evaluate the effectiveness of specific controls or procedures should not be the same individuals performing those specific controls or procedures.

### 9.2.1 Use of independent third party

Declaring executives may decide to use an independent third party to assist with their evaluations. Under these circumstances, the declaring executives should ensure that the individuals performing the evaluation procedures have the appropriate knowledge and ability to complete the procedures.

The declaring executives, or designates, should be involved in determining the procedures to be performed, the findings to be communicated and the mode of communication.

When an operator relies on independent third parties for the evaluation of controls, the operator should satisfy themselves that the work performed by these third parties provides sufficient support to the operator's Declaration.

## 9.3 Using the work of others

Operators, independent third parties engaged by operators or other external parties may perform certain procedures, not relating to EPAP, which may provide assurance over compliance with ERCB measurement and reporting requirements.

Operators may use the results of these existing procedures in evaluating controls for EPAP purposes. Such procedures may include

- Joint venture audits.
- SOX / CSOX compliance evaluations.
- Internal audits.
- Substantive audits.

- Other procedures.

### 9.3.1 Treatment

In the context of EPAP, an operator may treat such procedures as controls if they address specific risks of noncompliance. Performance of these procedures would indicate that controls addressing specific risks of noncompliance are addressed.

Regardless of the nature of the procedures performed, an operator should assess whether results from such procedures provide assurance over compliance with ERCB measurement and reporting requirements. For this assessment, the following factors should be fulfilled.

- Such procedures should generally clearly correlate to specific risks of noncompliance.
- Such procedures should generally meet the standards expected of top-down risk-based approach set in section 4.3.1 of the *EPAP Operator's Handbook*.
- The time period covered by the procedures relates to the operator's Declaration period.
- Such procedures should happen every year. If not, the operators should design controls to address the risks of noncompliance.
- Remediation actions identified because of such procedures should be addressed.

Operators may treat these existing procedures as controls for the purposes of EPAP. This treatment may require that operators adapt their results to meet the requirements of EPAP in a suitable manner.

Please refer to the Appendix V for examples on treatment of these procedures.

## 9.4 Measurement, Accounting, and Reporting Plan (MARP)

The ERCB has developed requirements for thermal bitumen schemes as required under the Oil Sands Conservation Act. *Directive 042: Measurement, Accounting, and Reporting Plan (MARP) Requirement for Thermal Bitumen Schemes* requires that a measurement, accounting, and reporting plan (MARP) is submitted for these types of schemes. (Refer to that directive for additional details.)

As part of MARP the operators are required to submit the information which is broadly divided into the following four categories regarding measurement, accounting, and reporting:

- General Scheme Information,
- Process and Measurement Diagram,
- Description of Proposed Operating Procedures,
- Accounting Calculations and Reporting.

### 9.4.1 MARP and EPAP

Submitting a MARP to the ERCB does not in itself satisfy the requirements of EPAP. Evaluating the controls that are, presumably, described in the MARP, does contribute to fulfilling EPAP requirements.

Regardless of the work performed relating to MARP, operators should assess whether results from such work provide assurance over compliance with ERCB measurement and reporting requirements for EPAP purposes. For this assessment, the following factors should be considered.

- Work performed should generally clearly correlate to specific risks of noncompliance.
- The time period covered by the work performed relates to the operator's Declaration period.
- Work performed should happen every year. If not, the operators should design controls to address the risks of noncompliance.
- Remediation actions identified because of such work performed should be adequately addressed.

Operators may treat the work performed as controls for the purposes of EPAP. This treatment may require that operators adapt the work performed for MARP to meet the requirements of EPAP in a suitable manner.

## 9.5 Selection of facilities for evaluation

ERCB measurement and reporting requirements apply to all oil and gas facilities in the province of Alberta. Every operator is required to comply with ERCB measurement and reporting requirements, regardless of the scale or type of their facilities.

To effectively and efficiently conduct the evaluation of controls, the operator may

- use judgment, based on risks associated with the facility in selecting an appropriate number of high risk facilities; and / or
- apply sampling techniques to select a representative sample of the remaining facilities for evaluation.

For example, Operator XYZ has fifty facilities. The operator may not need to evaluate all fifty facilities (and all the controls within each facility) to conclude on the effectiveness of controls in addressing the risk of noncompliance. operators may choose to evaluate the some facilities on a less frequent basis if such facilities produce insignificant production and where the complexity of operation is low.

Method of selection of facilities may depend on different criteria. Two alternatives are suggested below.

The alternatives for selecting facilities suggested below are two options; an operator may choose any other approach that suits their requirements.

### 9.5.1 Facility selection

The important criterion for selecting the facilities for evaluation purposes is that every facility should generally have an equal possibility of being selected. Based on this criterion, the alternatives suggested for selection of facilities are

#### 9.5.1.1 Alternative one

1) Rank the facilities based on risks associated with the facility. Select high ranked facilities and evaluate every risk of noncompliance at those facilities.

2) For the remaining facilities, select a few facilities, on a random basis, and evaluate every risk of noncompliance at those facilities.

#### 9.5.1.2 Alternative two

1) Rank the facilities based on risks associated with the facility. Perform the following:

   - evaluate every high risk noncompliance at those facilities. The ERCB Risk Assessed Noncompliances document contains the low risk and high risk noncompliances;

   - evaluate at least one of the low risk noncompliances at those facilities so that every risk of noncompliance is evaluated at one or more of those facilities.

2) For the remaining facilities, select a few facilities, on a random basis, and evaluate every risk of noncompliance at those facilities.

The key determinant of an adequate sample size is that the sample is large enough to provide the declaring executives with the confidence to sign the declaration that the operator has achieved a reasonable level of assurance over compliance across all the facilities.

In subsequent years operators may vary selection of facilities for evaluation of controls to maintain a reasonable level of assurance over compliance across all the facilities.

## 9.6 Selection of control occurrences for evaluation

As noted above, different controls operate at different frequencies. For example a monthly control occurs twelve times in a year and a quarterly control would occur only four times. An operator may select an appropriate number of occurrences to evaluate controls based on risk ranking of the noncompliances or by application of sampling methodology.

Prior to the evaluation, the operator is expected to document

- the rationale behind the selection of the sample including the anticipated confidence level,

- the level of failure that is deemed to be acceptable, and

- a methodology for expanding the sample size in case of deficiency.

The approach on appropriate sampling that represents the population of control occurrences is suggested below. The important criterion for application of these alternatives is that the selection should be completely random.

The following table reflects the sample sizes that may be selected for evaluation at a single facility

Table 1

| Minimum number of occurrences during the Declaration period | Initial sample size | Acceptable failure | Expanded sample size | Acceptable failure |
|---|---|---|---|---|
| 1 | 1 | 0 | N/A | N/A |
| 2 - 4 | 2 | 0 | N/A | N/A |
| 5 - 12 | 3 | 0 | N/A | N/A |
| 13 - 52 | 6 | 0 | N/A | N/A |
| 53 - 365 | 20 | 0 | N/A | N/A |
| >365 | 25 | 1 | 60 | 1 |

Generally, in evaluating controls, the minimum sample size may provide sufficient evidence to conclude that a control may be operating effectively assuming there are no failures. However, in certain situations, more than minimum samples sizes may be required to be evaluated. Examples of those instances include the following.

- Evaluation of high risk noncompliances. For example, if the operator is evaluating a high risk quarterly control at a high risk facility, the operator may choose to evaluate all the control occurrences, instead of the suggested minimum sample size identified in the table above.

- The more complex the control or the significance of the judgments that should generally be made in connection with its operation. For example, for a quarterly control, whether addressing a high risk or a low risk noncompliance, where the operation is more complex than other controls, the operator may choose to evaluate all the control occurrences, instead of the suggested minimum sample size identified in the table above.

- Controls over significant risks of noncompliance where the risk of failure of the control to operate effectively is higher than normal. For example, for a quarterly control, whether addressing a high risk or a low risk noncompliance, where the risk of failure is high, the operator may choose to evaluate all the control occurrences, instead of the suggested minimum sample size identified in the table above.

- Controls which are relatively more important. For example some controls may address multiple risks of noncompliance and certain period-end detective controls might be considered more important than related preventive controls.

### 9.6.1 Acceptable failure

Less frequent control occurrences, i.e., less than or equal to 365 control occurrences, represent relatively small populations where sampling methodology is of little help. For less frequent control occurrences, the ranges mentioned in table 1, represent good judgment in determining how much evidence is necessary to conclude that a control is operating effectively, provided no failures are found. Failure of one or more occurrences under these circumstances means that the control is deficient. Expanding the sample size cannot reasonably avoid the conclusion that the control is deficient.

The approach on acceptable failures for control occurrences that are more than 365 is suggested below:

- The suggested acceptable failure, for the initial sample size is one. For example, if the operator selects, on a random basis, 25 occurrences for evaluation, control is not deemed deficient if there is only one failure. More than one failure indicates that the control should generally be treated as deficient or the operator may choose to expand the sample size.

- For an expanded sample, the suggested acceptable failure is one. For example, if the operator selects, on a random basis, 60 different occurrences as part of expanded sample size for evaluation, the control is not deemed deficient if there is only one failure. More than one failure indicates that the control should generally be treated as deficient. Expanding the sample size a second time cannot reasonably avoid the conclusion that the control is deficient.

### 9.6.2 Expanding the sample size

In case of a failure of control occurrence, the operator may treat the control as deficient or may choose to expand the sample size. The approach for expanding the sample size is as suggested below.

- The expanded sample size should generally include entirely different occurrences than the one selected initially.

- The operator may select the suggested expanded sample size given in the table 1.

- Failure of at least one control occurrence should generally be treated as a deficiency.

## 9.7 Evidence requirements

In the context of planning the evaluation of controls, operators may consider the appropriate evidence requirements for specific controls in designing their evaluation procedures. operators may consider the type of evidence that needs to be collected to corroborate the evaluation of controls.

Evidence may vary in nature and level of precision depending on the risk of noncompliance and the nature of the control. Evidence could take the form of reports, both paper and electronic, as well as interview minutes, statements, forms, memos, etc.

## 9.8 Developing evaluation procedures

Evaluation procedures help the operator to follow appropriate steps required to complete an efficient evaluation. Evaluation procedures are required for every control that is being evaluated. Good evaluation procedures may include the following:

- person to be contacted for carrying out the evaluation;

- samples to be selected;

- evaluation tools to be selected;

- steps to be followed for evaluation including the adequacy of the design of the control in addressing the risk of noncompliance;
- control evidence required to substantiate the effectiveness of the control; and
- steps to be followed in case of a deficiency.

The nature, timing and extent of evaluation procedures necessary for declaring executives to obtain reasonable level of assurance over compliance with ERCB measurement and reporting requirements depends on the risks of noncompliance associated with these procedures.

## 9.9 Application of sampling

In the process of evaluating controls, operators may consider using sampling techniques. Sampling is that part of statistical practice concerned with the selection of individual observations intended to yield some knowledge about a population of concern, especially for the purposes of statistical inference.

Sampling is an efficient and effective tool to obtain sufficient, reliable, and relevant information using a limited data set. It can help operators evaluate controls, as well as reach evaluation conclusions and provide reasonable level of assurance to the ERCB.

It is anticipated that operators may apply sampling at three different occasions in the evaluation process.

1) Sampling may be applied to select a representative number of facilities from the total population or from groups of facilities within the population of facilities during the Declaration period.

2) Sampling may be applied to select a representative number of controls from the total number of controls during the Declaration period.

3) Sampling may be applied to select a representative number of occurrences of every control from the total number of occurrences of that control during the Declaration period.

### 9.9.1 Statistical and non-statistical sampling

There are two general approaches to sampling, non-statistical and statistical. Both approaches require the use of professional judgment in selecting the samples.

Non-statistical sampling means any other method of selection that it is not based on statistical technique but is based on judgment as to the appropriateness of a sample selection.

### 9.9.2 Representative samples

Regardless of which approach is chosen, either statistical or non-statistical, sample items should be selected in such a way that the sample can be expected to be representative of the population of facilities, controls or control occurrences. Therefore, all facilities, controls or control occurrences in the population would have an opportunity to be selected.

Operators ensure that the samples selected for evaluation address the risks of applicable noncompliance. This selection allows operators to obtain assurance over compliance with ERCB measurement and reporting requirements.

## 10 Evaluation of controls

The purpose of the evaluations of controls is to determine if the operator's controls are operating as intended. To support a conclusion that the risk of noncompliance is adequately addressed by the controls, operators should obtain appropriate evidence that the controls they have designed are operating as intended.

### 10.1 Assessment of controls

Operators should assess if the controls have been appropriately designed and are being performing as intended. Specifically, operators may consider the following.

- Does the control address the risks of a specific risk of noncompliance? The controls should prevent or detect the occurrence of the specific risks of noncompliance.
- Is the control being performed by the appropriate person? The control performer should have the adequate level of authority, knowledge of the business processes and controls and objectivity to perform the control effectively.
- Is the control performer aware of the responsibility to perform the control and the specific steps required to effectively perform the control?
- Has the control performer taken ownership of performing the control? The control performer should have agreed to perform the control and produce adequate evidence of performance consistently.
- Does the frequency with which the control is being performed address the risk of the associated risk of noncompliance?

### 10.2 Consistency of performance

Operators should assess if the controls are effective in consistently addressing the risks of noncompliance throughout the Declaration period. To make this assessment operators should

- select a representative sample of occurrences of the control,
- evaluate the evidence of performance by evaluating the selected sample, and
- determine if the control was consistently effective.

Regardless of the design and frequency of the control, operators should demonstrate that the controls are operating effectively on a consistent basis throughout the Declaration period.

### 10.3 Judgment by Operators

Operators should determine the nature and extent of the evaluation of controls using judgment, knowledge and experience, giving consideration to such factors that are specific to the operators as the following:

- The frequency with which control activities are performed.
- The number of controls addressing the risks of noncompliance.
- The number of facilities evaluated to assess the effectiveness of controls.

For example, a monthly company-level control has twelve occurrences – ten times the control operated and two times it did not. Judgment is required to form an opinion on the overall success of the control.

### 10.3.1 Judgment on evaluation of multiple controls

In case of multiple controls addressing one risk of noncompliance at a particular facility, where one or more controls are unsuccessful, operators should use judgment in determining if the risk of noncompliance has been addressed.

For example, an operator performs three controls for a particular risk of noncompliance. Two were successful in the evaluation and one was unsuccessful. Judgment is required to form an opinion on the overall success of the control.

### 10.3.2 Judgment on evaluation of multiple facilities

Where one or more facilities are determined to have unsuccessful controls to address a risk of noncompliance, operators should use judgment to conclude if the risk of noncompliance has been addressed at the operator level.

For example, an operator has one specific control for a particular risk of noncompliance. In two of the ten facilities evaluated the control was not effective. Judgment is required to form an opinion on the overall success of the control.

## 10.4 Evaluation tools

Upon selecting a representative sample of facilities and occurrences of controls, operators may choose an appropriate evaluation tool to assess the effectiveness of the controls.

Evaluation tools assist operators to assess the effectiveness of controls through systematic collection and analysis of information regarding the performance of controls.

There are various evaluations tools that may be used by operators including the daily interactions of the declaring executives with the controls, walkthroughs and re-performance of controls. The selection of a particular evaluation tool depends on the following factors:

- The complexity of the control and business process being evaluated.
- The nature of the risk of noncompliance.
- The level of risk associated with the facility.
- The level of risk associated with the risk of noncompliance.
- The operator’s level of confidence in the control activities.
- The results from previous evaluations.

Regardless of the evaluation tools chosen, operators should gather sufficient information to evaluate controls in support of the Declaration.

### 10.4.1 Operator's daily interaction with the controls

The operator's daily interaction with their controls is an evaluations tool that provides ongoing opportunities to evaluate the effectiveness of the controls during the Declaration period.

This daily interaction may provide an adequate basis for the operator's evaluation of controls if the operation of controls, policies and procedures is centralized and involves a limited number of personnel.

Reasonable support of such daily interaction may include memoranda, e-mails and instructions or directions from the Declaring executives to other employees.

### 10.4.2 Walkthroughs

A walkthrough is an evaluations tool that traces a transaction from origination, through the operator's information systems, to the operator's measurement records and reports. A walkthrough may assist an operator to confirm that

- They understand the components of controls, including those components relating to the prevention or detection of risks of noncompliance.
- They understand how transactions relating to measurement and reporting requirements are being processed.
- They have identified all points in the process at which misstatements relating to measurement and reporting requirements may occur.
- The components of controls have been implemented.

For example, an operator may want to trace the process by which a meter is calibrated at one of the operator's facilities. This tracing involves

- Gathering documentation regarding the process or processes associated with meter calibration and identifying the components in the process that need to meet the requirements set by the ERCB Directives.
- Identifying the personnel involved in the process and confirming the activities are performed according to the documented requirements by selecting one instance of meter calibration and walking through the process with them.
- Identifying where in the process of meter calibration controls exist and evaluating the performance of controls.
- Noting discrepancies between the description and performance of the process, undocumented processes or controls, and components of the process for which control is needed or appropriate but it is not in place.

### 10.4.3 Re-performance

Re-performance is an evaluations tool that requires the independent execution of certain components of the operator's controls that were performed previously. Re-performance may include inspecting internal or external records in paper form, electronic form or other media. The reliability of records depends on their nature, source and the effectiveness of controls.

For example, control activities over well test results are performed by an operator's Measurement Specialist.

As part of the controls around well test results, the Measurement Specialist

- Recalculates the well test ratios to see if they are reasonable and within the operator's tolerances.
- Recalculates the well test volumes in cases where there are large variances and determines if the well needs to be retested.
- Compares recalculated well test volumes to those already recorded in the Production Accounting System.

For the purpose of evaluation, re-performance would involve selecting a representative sample of well test results and confirming:

- Are the well test ratios reasonable and within the allowed tolerances?
- Were wells retested in cases where retesting was required?
- Were well test results accurately recorded into the Production Accounting System?

Re-performance helps operators identify:

- Are control activities being performed as prescribed?
- Are the results of the control activities evident and properly documented?
- Was action taken when a control activity identified an issue that needed to be resolved?

#### 10.4.3.1 Extent of re-performance

The extent of re-performance of a control is a matter of judgment for operators, acting reasonably.

- Controls that are performed more frequently generally require more evaluation efforts than controls that are performed less frequently.
- Controls that are manually operated likely require more rigorous evaluations than automated controls. operators may determine that they do not have to evaluate every individual step comprising a control in order to conclude that the overall control is operating effectively.

#### 10.4.3.2 Changing re-performance for each evaluation period

In planning their evaluations, operators may find it useful to adjust the nature, extent and timing for every evaluation from year to year.

Operators may consider the specific risks of noncompliance that the controls address when making these year-to-year adjustments to their evaluation plans. It may also be appropriate to:

- Evaluate controls at different interim periods.
- Increase or reduce the number and types of evaluations performed.

Changes in the combination of procedures from year-to-year are used in order to introduce unpredictability into the evaluations and respond to changes in circumstances.

### 10.5 Timing of the evaluations

EPAP requires operators to declare that they have evaluated the effectiveness of controls, as at the end of the Declaration period. operators are encouraged to schedule evaluations of controls throughout the Declaration period.

Testing of controls over a longer period of time provides more evidence of the effectiveness of controls than testing over a shorter period of time. Further, testing performed closer to the Declaration date provides more evidence than testing performed earlier in the year.

The Declaration period may or may not align with the operator's fiscal year end or calendar year. operators are to determine the Declaration period prior to their first Declaration submission to the ERCB. Declarations may be submitted within 1 month after the end of the Declaration period.

Regardless of the Declaration period chosen by operators, some control procedures may occur at the end of the Declaration period (i.e. annual controls) and, therefore, some evaluations of controls occur subsequent to the end of the Declaration period. Accordingly, to effectively time the evaluations of controls, operators may take into account the following:

- The risks of noncompliance associated with the controls being evaluated.
- The tools used to evaluate the controls.
- If the controls being evaluated are performed prior to, or subsequent to, the end of the Declaration period.

### 10.6 Extent of examination for each evaluation period

For every Declaration period, operators may evaluate those controls that, in combination, provide a reasonable level of assurance regarding the compliance with ERCB measurement and reporting requirements.

For example, operators should not exclude controls for a particular risk of noncompliance from the scope of their evaluation simply based on successful prior-year evaluation results.

To achieve a reasonable basis for declaring on the effectiveness of controls, operators should have sufficient evidence supporting the effectiveness of all relevant controls over ERCB measurement and reporting requirements as of the date of their Declaration.

### 10.7 Documenting evaluations

*Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements* requires that operators maintain documentary evidence sufficient to provide reasonable support of their controls evaluation procedures and conclusions.

#### 10.7.1 Extent of documentation

The extent of documentation used to support an operator's evaluations of controls over ERCB measurement and reporting requirements for each Declaration period varies depending on the size and complexity of the operator's controls. The extent of documentation is a matter of judgment for operators, acting reasonably.

#### 10.7.2 Documentation for evaluations of controls

To provide reasonable support for the evaluation of controls over ERCB measurement and reporting requirements, operators should generally document the following:

1) person(s) who carried out the evaluation;

2) samples selected;

3) evaluation tools selected;

4) control evidence selected to substantiate the effectiveness of the control;

5) conclusions on the controls including the adequacy of the design of the control in addressing the risk of noncompliance and the operational effectiveness of the control; and

6) steps followed in case of a deficiency including the documentation collected to substantiate the deficiency.

Maintaining sufficient documentary evidence is important because, as part of the EPAP monitoring and escalation process, the ERCB, when appropriate, requests operators to submit the documentation supporting the work performed and the conclusions drawn from the evaluation.

## 11 Assessing and reporting the results of the evaluations

After evaluating the controls over ERCB measurement and reporting requirements, operators reach a conclusion on the overall adequacy of controls in addressing the risk of noncompliance at the operator level and report their conclusion to the ERCB.

### 11.1 Assessing the results of the evaluation

#### 11.1.1 Exercising judgment

In assessing the results of the evaluation of controls, operators are expected to exercise judgment to determine the following.

- For individual controls, where the control occurs multiple times during the year, if the failure of one or more occurrence represents deficiency of the control in addressing the risk of noncompliance.

- Where multiple controls exist to address the same risk of noncompliance, if a deficiency in one or more controls represents a deficiency of the risk of noncompliance.

- Where controls are evaluated at multiple facilities for the same risk of noncompliance, if a deficiency in a control at one or more facilities represents a deficiency of the risk of noncompliance.

### 11.1.2 Documenting judgment

Operators are to document the rationale behind their judgment as well as the methodology applied for arriving at such conclusions with sufficient level of detail.

Documentation regarding the operator's judgment may be requested for review by the ERCB and challenged under the following circumstances:

- the compliance assessment report indicates potential noncompliance at reported facilities, or

- the PAT receives information from other sources that calls the operator's judgment into question.

Though operator's judgment is generally accepted by PAT, operators should understand that the PAT auditors, at their discretion and depending on the circumstances of each case, may question specific decisions.

### 11.1.3 Compensating controls

If operators identify controls that do not operate as intended they should consider if there is a compensating control that addresses the risk of noncompliance.

Compensating controls are controls that generally operate at a higher level and work to cap the exposure from another control if it were to be deficient. If compensating controls are operating effectively they prevent or detect a risk of noncompliance, depending on the level of the precision of the compensating control.

Under such circumstances, the operator is expected to evaluate the compensating control as if it is the control designed to address the risk of noncompliance and conclude.

If operators are unable to identify a compensating control, then they should conclude that a deficiency relating to the operation of controls over ERCB measurement and reporting requirements exists.

### 11.1.4 Indicators of deficiencies in controls

Operators should use their judgment to determine if the following situations indicate a deficiency in controls.

- Identification of risk of noncompliance in the Declaration period under circumstances that indicate that noncompliance would not have been detected by the controls.
- Restatement of data previously submitted to the PRA or to the ERCB relating to measurement and reporting.

- Ineffective oversight of controls by the Declaring executives or designates.
- High scores in the compliance assessment report provided to operators by the ERCB.
- Voluntary self disclosures made during the Declaration period relating to measurement and reporting.
- Findings from field inspections conducted by the ERCB Field Surveillance & Operations Branch.
- Audit findings from recently conducted internal audits, substantive audits and joint venture audits.
- Items listed on the ERCB Volumetric Noncompliance Error Report produced by the PRA.
- Provisional Assessments received from Alberta Energy.

### 11.1.5 EPAP remediation alternatives

The EPAP design contemplates that once the operators have evaluated a control and have arrived at a "Deficient" conclusion, they should do something. The available alternatives for action are shown on the following list.

- Perform some remediation of the control design, control operation or underlying business process, depending on where the deficiency exists. ERCB believes this alternative is the most common case.
- Determine that the situation is eligible for an exemption as allowed in Section 5 of *ERCB Directive 017 - Measurement Requirements for Upstream Oil and Gas Operations* – Site-specific Deviation from Base Requirements.
- Apply for a formal ERCB exemption from measurement or reporting requirements.
- In rare cases, the remediation may consist of dialling back the control design if the "Deficient" conclusion is for trivial problems.

Longer-term actions include requesting

- an addition for operator's specific situation to Section 5 of *ERCB Directive 017 - Measurement Requirements for Upstream Oil and Gas Operations* – Site-specific Deviation from Base Requirements or
- a revision to *ERCB Directive 017 - Measurement Requirements for Upstream Oil and Gas Operations*, outside of Section 5.

The control design as well as the evaluation of controls procedure should include considerations of risk and materiality of noncompliance. ERCB does not support operators making a risk and materiality judgment, after concluding that the control is Deficient, before determining that remediation should be performed.

In planning the remediation, ERCB encourages the operators to make judgments about

- the scope of the remediation, and
- the timing of remediation; ERCB wants all operators to address larger, more widespread and higher risk problems first.

EPAP does not provide for

1) ignoring remediation due to a lack of resources or a materiality judgment that is outside the bounds defined in Section 1 of *ERCB Directive 017 - Measurement Requirements for Upstream Oil and Gas Operations* – Standards of Accuracy, nor

2) informal exemptions such as a verbal agreement between the operator and the assigned PAT member.

## 11.2 Reporting the results of the evaluation

### 11.2.1 Reporting the results on the Declaration

Operators are to report a summary of the conclusions of the evaluation of controls in the attachment to Declaration.

A copy of the Declaration text can be found in the *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements* which can be downloaded from the ERCB website.

### 11.2.2 Reporting the summary results of the evaluation

For every reporting theme, operators are to report the number of facilities that were evaluated, the number of facilities where the controls were deemed to be effective and their conclusion as to whether or not their controls are acceptable (meaning the controls adequately address the risk of noncompliance).

### 11.2.3 Reporting remediation plans and actions taken

The operators are expected to adequately remediate or prepare a plan to remediate the deficiencies in controls relating to the design or operation. This information is not part of the Declaration. However, the PAT auditor may ask the operator to report the remediation plans as part of their review.

*Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements* states that remediation plans, including their expected and actual completion dates, are to be reported through the EPAP website on request.

### 11.2.4 Submitting the Declaration

Operators are to submit a complete Declaration at the end of the Declaration period to the ERCB. The attachments are to be completed and are submitted along with the Declaration.

Information on the process for submitting the Declaration to the Production Audit Team is described in the online help for the EPAP system, available on the ERCB website.

# 12 Maintaining the design of controls

Prior to submitting the Declaration, Declaring executives are to consider the following questions.

1) Are there any new risks of noncompliance? If so, does the current design of controls continue to provide a sufficient basis for the Declaration?

   New risks could arise from changes in the business or from changes and additions to ERCB measurement and reporting requirements.

2) Are the appropriate levels of management aware of the scope and quality of ongoing monitoring of controls, including the extent, nature and frequency of reporting from the ongoing monitoring?

   Management could change from year-to-year, as well as reporting requirements, scope and frequency of control being reviewed and reported on.

3) Has the work of the operator's audit function or other assurance activities performed by external parties being taken into account in evaluating controls?

   Other assurance activities such as internal audits, joint venture audits and SOX and CSOX compliance evaluations may influence the extent of control evaluations over ERCB measurement and reporting requirements.

4) Are the incidences of deficiencies that were identified during the Declaration period indicative of design or operating deficiencies?

   An increased incidence of deficiencies in addressing risks of noncompliance indicates that the design or operational effectiveness of controls requires special attention and effort in future Declaration periods. Significant changes from year to year may require adjustments in the design of the operator's controls or evaluation procedures to ensure controls remain effective in addressing the risks of noncompliance.

## 13 Monitoring and Escalation

Monitoring and Escalation is a collaborative process, in which the PAT will be reasonable, but firm, in dealing with operators who come to their attention through the Compliance Assessment process.

### 13.1 Monitoring and Escalation

The goal of PAT is, to the extent possible, to ensure operator compliance with the requirements stated in various relevant directives.

PAT approaches the monitoring and escalation as follows.

1) PAT monitors the Declaration and the attachments thereof and provides feedback to the operator.

2) PAT assists the operator to achieve compliance and maintain compliance, and that means giving feedback at regular intervals. On a monthly basis every operator is provided with

   - a summary Compliance Assessment report for all the operator's facilities;

- a comparison of the operator's performance over the past year to comparable portions of industry; and
- a more detailed report focusing on individual indicators at each of the operator's facilities.

The PAT uses these reports to focus on those facilities and operators that seem to be experiencing difficulties or that seem not to be doing as well as the others.

It is to be understood that ERCB is not abandoning its responsibility. ERCB is not moving towards industry self-regulation. ERCB is involved and expects to stay involved in ensuring compliance.

## 13.2 Monitoring Declaration

The monitoring process for Declaration includes reviews of

- the appropriateness of persons chosen to act as the Declaration signing authorities,
- the reasonability of Attachment A to the Declaration, and
- the reasonability of Attachment B to the Declaration.

## 13.3 Monitoring Compliance Assessment process

The Compliance Assessment report does not contain solutions; it merely raises questions that serve to focus the operator's and the PAT auditor's attention on those facilities that seem to be experiencing difficulties. Some of the questions it raises may have already been answered through the Declaration.

For example if the operator has a high score that seems to be related to a control that the operator has deemed deficient in the Declaration and is in the process of remediating, there is no point in PAT worrying over the score. Presumably the issue is already being dealt with. Similarly if this high score appeared on last month's report and the operator provided a remediation plan at that time, it is reasonable to think that the effect of remediation plan simply needs time to work its way through the system.

The monitoring process is an exercise in judgment on the part of the PAT auditor. The PAT auditor would like to be aware of and consider what the operator has provided, in the Declaration and in any previous conversations that the PAT auditor had with the operator. If the information from the operator adequately explains the contents of the Compliance Assessment report, there may be no further interaction, and the operator may not hear from the PAT auditor.

However, if there appears to be a disconnect between the Compliance Assessment report and the other information available on that operator, the PAT auditor may need to gather more information. The PAT auditor's initial reaction is to phone whomever the operator has designated as the first point of contact.

If the contact person is able to explain the situation identified on the Compliance Assessment report, The PAT auditor will document the reason provided to avoid a similar situation in succeeding months.

In cases where the compliance assessment indicators cannot be easily explained, the PAT auditor may request that the operator investigate further.

## 13.4 Escalation under Declaration process

Escalation under Declaration process includes:

1) The PAT auditor phones whomever the operator has designated as the first point of contact.

2) An action item is created for every communication that requires action by the operator.

3) If the operator is not co-operative or nonresponsive to the action items, *Directive 019: ERCB Compliance Assurance - Enforcement* is invoked.

## 13.5 Escalation under compliance assessment process

The steps involved in compliance assessment escalation process are as follows:

- Investigation and Remediation
- Extended Reporting
- Controls-based Audit
- Substantive Audit

### 13.5.1 Investigation and Remediation

As a first step in the escalation, the PAT auditor requests the operator to perform investigation around the indicators provided by the ERCB. An action item is created for every communication that requires action by the operator. By logging into the EPAP system, the operator is granted the access to the content of the action item created. Further, the operator also receives e-mail with the same information.

Once the action item is resolved by the operator, the action taken and the results are entered into the EPAP system by the operator. The PAT auditor receives notification of the update carried out by the operator.

However, if the investigation results in another issue that requires operator's attention, the operator is expected to resolve the resulting issue as well. The action item will only be closed by the PAT auditor once all the pending issues are resolved to the satisfaction of the PAT auditor.

In cases where, given sufficient time to take effect, the remediation doesn't have the expected impact on the Compliance Assessment indicators, the PAT auditor may request the operator to conduct additional investigation until the issue is resolved, or until the PAT auditor determines that nothing further can be accomplished by following this path.

### 13.5.2 Extended Reporting

If an operator's investigation did not yield expected results, the PAT auditor may request the operator to provide additional information regarding the work performed by the operator relating to maintaining compliance with EPAP as the second step of escalation.

Extended reporting is necessary for the PAT auditor to understand the details of the work performed by the operator. However, extended reporting does not mean additional evaluation of controls by the operator, unless the operator deems it necessary to perform additional evaluations.

Extended reporting generally includes the following information for the facility where an issue is outstanding.

- description of controls;
- nature of the control (company-level, operating area-level or facility-level);
- type of the control (manual / automated or preventive / detective)
- title of the control performer;
- title of the evaluator;
- evaluation procedures designed for this control (whether or not controls were evaluated at this facility); and
- results of the evaluation, if performed.

The PAT auditor's review of the information provided by the operator includes

- if the operator has sufficient understanding of controls, nature and type, and the controls are designed to adequately address the risk of noncompliance;
- if the title of the control performer is acceptable;
- if the controls are evaluated by personnel with adequate objectivity;
- if the evaluation procedures are adequate to evaluate the control; and
- if the results of evaluation are accurately reported to the ERCB.

The purpose of escalation is to resolve outstanding issues. Through extended reporting, if the operator demonstrates the adequacy of work being performed relating to the outstanding issue, the PAT auditor agrees with the operator on the action required to resolve the outstanding issue.

However, if the review of the information provided by the operator during the course of the extended reporting does not provide adequate resolution to the outstanding issue, the PAT auditor escalates the issue to the next level.

### 13.5.3 Controls-Based Audit by PAT

Conducting a Controls-based audit by the PAT auditor is the next step in the escalation process. The PAT conducted control-based audit is generally limited to the facility that has the outstanding issue and includes the following.

- Follow-up on any issues left un-answered during the preceding steps of the escalation process.
- Conduct a controls-based audit. Develop evaluation procedures and carry out the evaluations. If the controls are not designed by the operator or the designed controls are not adequate to address the risk of noncompliance, then the PAT auditor documents a noncompliance audit finding.
- Produce and share the audit findings with the operator.
- Create Action Items for the remediation work and agree on them with the operator.

As mentioned, the preferred outcome of the controls-based audit is agreement on remediation actions that correct the outstanding issues.

### 13.5.4 Substantive audit

The next step in the escalation process is a traditional, substantive audit. The detailed description of what a substantive audit entails is covered in *Directive 046: Production Audit Handbook*.

## 13.6 Directive 019 Enforcement

The above mentioned escalation steps assume that the operator is co-operating with the PAT auditor and making adequate efforts to solve the outstanding issues identified.

However, if the operator is not co-operative or nonresponsive to the direction provided by the PAT auditor, *Directive 019: ERCB Compliance Assurance - Enforcement* is invoked.

*Directive 019: ERCB Compliance Assurance – Enforcement* makes extensive use of the term Licensee. The definition of Licensee in Directive 019 includes the definition of operator as used in the EPAP Operator's Handbook.

## 13.7 Escalation caveat

Though the escalation process is comprehensively defined and will be followed appropriately by the PAT, the operator should understand that the PAT auditors, at their discretion and depending on the circumstances of each case, may proceed directly to any step in the escalation process without completing the preceding steps.

# 14 Accessing the EPAP system

*Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements* requires that operators submit the Declaration using the EPAP system. Further, any action item initiated by the PAT from the compliance assessment process and Declaration review process is to be remediated and reported using the EPAP system.

Access to the EPAP system is through the ERCB's Data Submission and Reporting System available through the ERCB website.

Guidance on how to use the system is provided to the operators in the "Help" menu of the EPAP system which is self-explanatory. Operators, if required, can also print these instructions.

# 15 Operating EPAP

## 15.1 Checklist - Annually after first Declaration

The following checklist should be used annually after the first Declaration.

| | Task | More Details found in |
|---|---|---|
| 1. | Act on the Compliance Assessment Report<br>• Every month the operator is provide with a Compliance Assessment report from the PAT.<br>• By taking appropriate actions on the compliance assessment report as required, the operator may reduce the number of Compliance Assessment indicators in subsequent months | Section 1.3 of the *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements* |
| 2. | Applicability of risks of noncompliance to the facilities<br>• Reassess the applicability of risks of noncompliance carried out in prior years. | Section 5.3 of this Handbook |
| 3. | Review controls<br>• Reassess the controls and verify if the controls adequately address the risks of noncompliance. If required, controls may be required to be redesigned as applicable.<br>• Verify if there are any new risks of noncompliance that require designing of new controls.<br>• Determine if there are any new exemptions that are obtained from ERCB for any of the risks of noncompliance. | Sections 4, 5, 6 and 7 of this Handbook |
| 4. | Evaluation of controls<br>• Operators may consider control self assessment (CSA) as a low cost precursor to the evaluation of controls process. CSA does not substitute for the evaluation of controls process.<br>• Some controls should generally be evaluated each year.<br>• For controls that are failed during the evaluation, determine whether there are any compensating controls.<br>• Controls that are deficient should generally be reported to the ERCB through the Declaration process. | Sections 7.1, 8 and 9 of this Handbook |
| 5. | Submission of declaration<br>• Declaration should generally be submitted to the ERCB on an annual basis through the EPAP system. | Section 2 of the *Directive 76: Operator Declaration Regarding Measurement and Reporting Requirements* |
| 6. | Documentation<br>• Operators should generally document the judgment applied during the design and evaluation of controls. | Sections 6.3 and 9.6 of this Handbook, and Sections 1.3, 3 and 4 of the *Directive 76: Operator Declaration* |

| Task | More Details found in |
|---|---|
| • Controls and evaluation results should generally be documented and should be provided to the ERCB on request. | *Regarding Measurement and Reporting Requirements* |

## 16 Suggestions for continuous improvement

One of the key outcomes of EPAP is an operator's continuous improvement towards compliance with ERCB measurement and reporting requirements. There are many ways in which this can be achieved. The suggestions below may be a useful starter list for discussion.

1) Recent production audit findings
   a) Audit findings from either ERCB or internal audit
   b) Confirm that the audit findings have been acted upon
   c) Determine if the audits findings apply to other facilities that were not subjects of the audit
   d) Initiate remediation action if needed

2) Recent Field Surveillance & Operations Branch inspection findings
   a) Confirm that the Field Surveillance inspection findings have been acted upon
   b) Determine if the inspection findings apply to other facilities that were not subjects of the inspection
   c) Initiate remediation action if needed

3) PAT Top 10 or 20 list of audit findings
   a) Determine if any of these audit findings would be found across the facilities
   b) The operator may only find a small subset are relevant
   c) Address these audit findings by strengthening controls if needed

4) Integration
   a) Improve integration between field operations and production accounting

5) Facility Schematics
   a) Ensure that all facilities have schematics and that the drawings are current

6) Data quality enhancement initiatives
   a) Determine if Data quality enhancement initiatives at some facilities or in production accounting would yield benefits
   b) For example removing abandoned wells from the active well list
   c) For example removing abandoned facilities from the active facilities list
   d) For example synching well statuses better between field operations and production accounting
   e) For example removing divested properties from field data gathering and from production accounting

7) Current practices
    a) Identify opportunities to strengthen controls
8) Self-inspections
    a) Perform self-inspections based on the Field Surveillance list of noncompliance events
    b) Use the self-inspection findings to strengthen controls to minimize re-occurrence of these noncompliance events
9) Internal Audits
    a) Review the findings of internal audits (focussing on audits that included a measurement and reporting component)
    b) Confirm that the audit findings have been acted upon
    c) Determine if the audits findings apply to other facilities that were not subjects of the audit
    d) Initiate remediation action if needed
10) Joint Venture Audits
    a) Review the findings of recent joint venture audits
    b) Confirm that the audits findings have been acted upon
    c) Determine if the audits findings apply to other facilities that were not subjects of the audit
    d) Initiate remediation action if needed
11) Noncompliance event list
    a) Identify those events that are most likely to occur at the operator's facilities
    b) Strengthen controls required to minimize risk of noncompliance
12) ERCB Noncompliance Report produced by the PRA
    a) Strengthen controls to reduce the number of errors and warnings
13) Provisional Assessments that have been received from Alberta Energy
    a) Strengthen controls required to minimize re-occurrence

## 17 Voluntary self-disclosures

The ERCB encourages all operators to actively monitor their compliance with the ERCB measurement and reporting requirements and voluntarily report noncompliance events. *Directive 019: ERCB Compliance Assurance - Enforcement* (section 6) contains details of what constitutes a voluntary self-disclosure and the actions to be taken by an operator.

## 18 Appendix I – Sample attachments to the Declaration

## 18.1 Attachment A – Summary of evaluation of controls

Three examples of Attachment A follow, illustrating what the EPAP system will generate. These examples are for typical small, medium and large operators (we recognize that in practice it may be harder to make distinct differences).

### 18.1.1 Example 1- Large Operator

This operator (see Example 1 on following page) manages and controls some groups of facilities (not necessarily all) that are geographically connected as operating areas. Other, more separated, facilities are treated individually. This operator also has a number of single-well batteries scattered around the province that are, for some themes, managed solely with company-level controls.

Note that controlling some ERCB requirements at an operating area level does not mean that all ERCB requirements for the same facilities must also be controlled at that level; it is conceivable that a few really significant requirements are controlled on a facility-by-facility basis (even within an operating area) while other requirements are handled at the level of the operating area for the same facilities. It is even possible that for some reporting themes, the controls for all facilities reside at a company level.

It is important that each facility is reported only once, in the category deemed by the operator to be the most important for that theme, even if it is managed by controls at multiple levels (which is often the case). Because we include a facility in only one control category, the difference between the total number of facilities covered for each ERCB Item and the number of facilities determined from the PRA data represents the number of facilities with no controls for that Item. Attachment B will display the reasons for those facilities not being covered by controls.

“Facilities Population” in this table refers to the number of facilities to which the theme applies, not necessarily the total number of facilities operated by this operator. “Operating Area Population” refers to the number of Operating Areas to which the item applies, not necessarily the total number of Operating Areas operated by this operator.

### 18.1.2 Example 2 – Medium-Sized Operator

In Example 2 on following page, the operator operates a mixture of facility sizes: 125 of these range from significant to large while another 80 are very small – but none of them is managed as part of an operating area. For most of the ERCB requirements, the smaller facilities are subject to only company-level controls. This is also true for a very few of the ERCB requirements for the larger facilities. Normally, the larger facilities have either facility-level controls only or both facility-level and company-level controls. As above, individual facilities are reported in only one category or the other, depending on which controls are deemed to be more important by the operator so the total of the three Facilities Populations can never be more than 205 (though it may be less).

### 18.1.3 Example 3 - Small Operator

This example (Example 3 on following page) represents Attachment A for the Declaration of an operator with a total of 15 single-well batteries; compliance is ensured only by company-level controls (the operator likely has a very small staff and relies on personal knowledge for

much of the control activity). As would be expected, not all ERCB Items apply to all facilities.

| Reporting theme | Facility-Level Controls | | | Operating Area-Level Controls | | | | Company-Level Controls | | | Opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Facilities Population | Facilities Evaluated | Facilities Effective | Operating Area Population | Facilities Population | Operating Area Evaluated | Operating Area Effective | Facilities Population | Evaluated? | Effective? | |
| Theme #1 | 250 | 15 | 14 | 3 | 45 | 2 | 2 | 80 | Yes | Yes | Adequate |
| Theme #2 | 295 | 30 | 28 | | | | | 80 | Yes | No | Deficient |
| Theme #3 | 250 | 15 | 15 | 2 | 40 | 2 | 2 | 70 | Yes | Yes | Adequate |
| Theme #4 | 250 | 25 | 20 | 4 | 55 | 3 | 2 | | | | Deficient |
| Theme #5 | 250 | 25 | 24 | 3 | 45 | 2 | 1 | 75 | No | | Adequate |

**Example 1: Large Operator: Controls at all Levels**

| Reporting theme | Facility-Level Controls | | | Operating Area-Level Controls | | | | Company-Level Controls | | | Opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Facilities Population | Facilities Evaluated | Facilities Effective | Operating Area Population | Facilities Population | Operating Area Evaluated | Operating Area Effective | Facilities Population | Evaluated? | Effective? | |
| Theme #1 | 125 | 15 | 14 | | | | | 80 | Yes | Yes | Adequate |
| Theme #2 | | | | | | | | 205 | Yes | No | Adequate |
| Theme #3 | 125 | 15 | 9 | | | | | | | | Deficient |
| Theme #4 | 205 | 35 | 33 | | | | | | | | Adequate |
| Theme #5 | 95 | 15 | 15 | | | | | 110 | Yes | Yes | Adequate |

**Example 2: Medium-Sized Operator: Facility- and Company-Level Controls Only**

| Reporting theme | Facility-Level Controls | | | Operating Area-Level Controls | | | | Company-Level Controls | | | Opinion |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Facilities Population | Facilities Evaluated | Facilities Effective | Operating Area Population | Facilities Population | Operating Area Evaluated | Operating Area Effective | Facilities Population | Evaluated? | Effective? | |
| Theme #1 | | | | | | | | 15 | Yes | Yes | Adequate |
| Theme #2 | | | | | | | | 15 | Yes | No | Deficient |
| Theme #3 | | | | | | | | 15 | Yes | Yes | Adequate |
| Theme #4 | | | | | | | | | | | |
| Theme #5 | | | | | | | | 10 | Yes | Yes | Adequate |

**Example 3: Small Operator: Only Company-Level Controls**

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## 18.2 Determining What to Enter

Where controls for a reporting theme exist at more than one level, you are to decide what you wish to report for which population of facilities. The only rule is that an individual facility is to be reported as being controlled at only one level, regardless of how many levels might be involved. We are not attempting to build an inventory of your control system, we only want to know that facilities are being controlled and we are prepared to accept your judgment as to the level at which your key controls reside. Note that this may be different for every ERCB item and may be different for different facilities.

It is entirely possible that even when dealing with a control environment at a single level, there may be many controls involved regarding a single reporting theme. When entering Evaluations and Results (i.e. level of effectiveness), be sure to be clear on the unit of evaluation: we do not want you to report the number of controls evaluated. So when evaluating facility-level controls, you need to report the number of facilities at which one or more controls were evaluated and the number of facilities at which those evaluations showed that your controls were effective.

If, at a specific facility, a particular item is addressed by several controls and some of these controls were effective and some of them weren't, you need to decide what that means. Generally, if the failure of one control in a set of controls resulted in a noncompliance event, your controls are ineffective; if no noncompliance event occurred because the controls that worked made up for the one that failed, then that probably indicates that your controls are effective; if no noncompliance event occurred only because you were lucky, you need to make up your own mind.

When evaluating operating area-level controls, the number of evaluations is based on the number of operating areas, not the number of facilities contained within those operating areas, and certainly not the number of controls that you might have had to evaluate in order to be able to make your assessment of effectiveness.

Controls that operate at a company level are assumed to be a singular unit and you either tested them or you didn't, or they are either effective or they are not, so no numbers are involved here.

## 18.3 Attachment B: Reasons for No Controls

Where you indicate that some facilities have no controls in place for certain Themes, the EPAP system will prompt you to enter a reason for having not controls and then report these reasons and the number of facilities affected in Attachment B.

| Reporting Theme | Facilities Population | Reason for No Controls |
|---|---|---|
| Theme #1 | 15 | Not applicable |
| Theme #7 | 15 | Exemptions granted at some, rest not applicable |
| Theme #12 | 15 | Other: no valid reason |

**Example 4: Attachment B: Reasons for No Controls**

## 19 Appendix II – Control Objectives

Following is an illustrative list of risks of noncompliance and the control objectives. During the design of controls to address the risks of noncompliance, the operators are expected to consider the objective of the control.

### 19.1 Examples of risks of noncompliance and control objectives

| Example No. | Risks of noncompliance | Control Objective | Directive or Other regulatory reference |
|---|---|---|---|
| 1 | Inaccurate flare meas. | Flared gas volumes are accurately measured | D017 4.2.2 |
| 2 | Inaccurate accounting and reporting of actual gas production | Actual gas production volumes are accurately accounted for and reported | D017 6.5 |
| 3 | Inaccurate vent gas estimation | Vent gas volumes accurately estimated | D017 4.2.2 |
| 4 | Receipt point gas meas. device(s) does not exist, is not installed correctly, or not in use | Receipt point gas measurement device existence, installation and usage to comply with each element of D017 | D017 4.1 and OGCR 14.070 |
| 5 | Inaccurate gas volume calculations | Gas volume derivation is accurate and complete | D017 4.3.2 |
| 6 | Inaccurate accounting and reporting of hydrocarbons liquid dispositions | Hydrocarbons liquid dispositions are accurately accounted and reported | D07 1.3 |
| 7 | Inaccurate accounting and reporting of hydrocarbon liquid receipts | Hydrocarbons liquid receipts are accurately accounted for and reported | D07 1.3 |
| 8 | Inaccurate accounting and reporting of gas receipts | Gas receipts are accurately accounted for and reported | D07 1.3 |
| 9 | Inaccurate reporting of flare gas | Flare gas is accurately reported | D07 1.3 |
| 10 | Meas. device(s) calibrated/proven inappropriately and not within required frequency | Meas. device(s) calibrated/proven appropriately and within the required frequency | D017 2 |

## 20 Appendix III - Process documentation examples

The process documentation examples have been developed to provide ideas for operators who need to develop process documentation as part of the implementation of EPAP.

The examples are seen as somewhat generic. Operators are encouraged to add or remove detail to more accurately describe their own business processes.

## 20.1 Example 1: Meter Calibration Process (Company-level controls)

### 20.1.1 Process Narrative for Meter Calibration process (Company-level)

#### 20.1.1.1 Background

Meters must be calibrated / proven within the required frequency and in compliance with ERCB Directives and other documents to ensure they provide accurate measurement data.

#### 20.1.1.2 Associated risk of noncompliance

Measurement device(s) calibrated / proven inappropriately or not within required frequency. This noncompliance results in inaccurate measurement.

#### 20.1.1.3 Process owners

1) Field Operator is responsible for:
   a) Examining and understanding the ERCB meter calibration requirements.
   b) Preparing and reporting calibration schedule to the Measurement Specialist.
2) Measurement Specialist is responsible for:
   a) Reviewing the calibration schedule.
   b) Reviewing the calibration procedures.
   c) Scheduling meter calibrations with the Field Operators and/or Vendors.
   d) Reviewing a selection of meter calibration reports and ensuring procedures were followed.
   e) Preparing calibration reports and entering meter calibration data into the system.
3) Field Operator / Third-party vendor is responsible for:
   a) Performing meter calibrations.
   b) Preparing and reporting the meter calibration Reports to the Measurement Specialist.

#### 20.1.1.4 Process description

1) At the beginning of the year the Field Operator, examines the ERCB meter calibration requirements and prepares a schedule of meter calibration for the current year. The Field Operator updates the Meter Data database with the schedule for the year.
2) The Field Operator forwards the schedule to the Measurement Specialist for the review of the schedule.
3) The Measurement specialist reviews the calibration schedule for the year and arranges for calibration of meters as per the schedule.
4) The Measurement Specialist contacts Field Operators and/or Third-party vendors for the calibration of the meters.

5) The Measurement Specialist reviews the calibration procedures to be followed by the Field Operator / Vendor to ensure that they are as per the ERCB guidelines for calibration.

6) Once the Field Operators or Third-party vendors complete the calibration of the meters as per the schedule, they prepare a meter calibration report and update the Meter Data database. Meter calibration report is forwarded to the Measurement Specialist for review.

7) The Measurement Specialist reviews the results and determines whether:

   - the meters are performing as required; and
   - the meter calibration is complete.

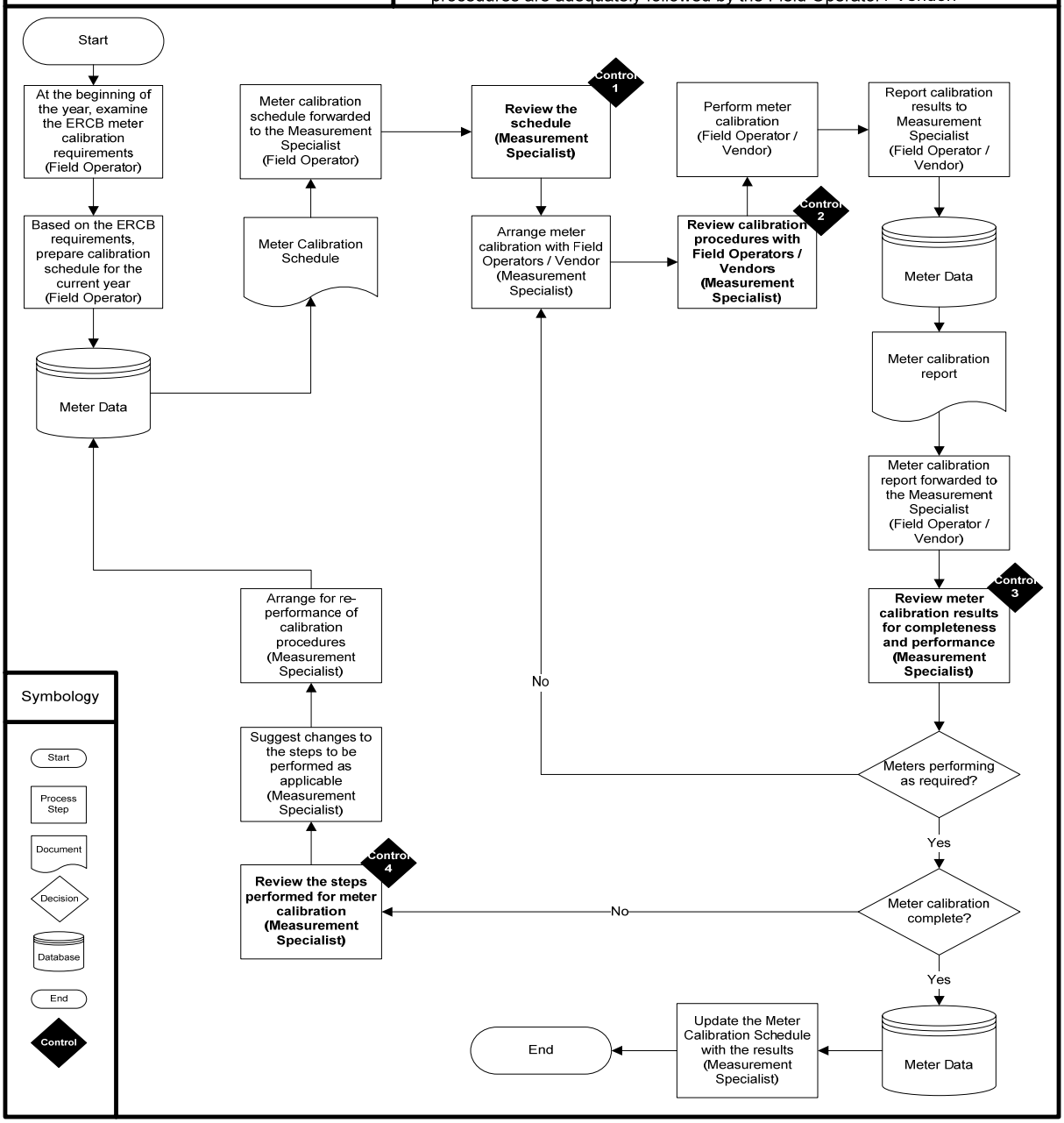
8) If the meters are performing as required and the meter calibration is complete, the Measurement Specialist updates the Meter Data database with the results and the meter calibration schedule with the completed meters.

9) In cases where the meters are not performing as required, the Measurement Specialist reschedules the meter calibration with the Field Operators or Third-party vendors. Procedures as mentioned from step 4 above are performed.

10) In cases where the meter calibration is not complete, the Measurement Specialist reviews the meter calibration procedures to see if the meters were calibrated in accordance with established procedures. The Measurement Specialist updates the meter calibration schedule and reschedules meter calibration for the specific instances. Procedures as mentioned from step 2 above are performed.

## 20.1.2 Process Map for Meter Calibration process (Company-level)

| Operator XYZ | Controls: |
|---|---|
| Process: Meter Calibration | • **Control 1**: The Measurement Specialist reviews meter calibration schedule prepared by the Field Operator to ensure that the ERCB requirements relating to the meter calibration are addressed.<br>• **Control 2**:The Measurement Specialist reviews the calibration procedures to be followed by the Field Operator / Vendor to ensure that they are as per the ERCB guidelines for calibration.<br>• **Control 3**: The Measurement Specialist reviews the calibration results to ensure that the ERCB requirements are complied with and that the calibration is complete and the meters are performing as required.<br>• **Control 4**: In cases where meter calibration is not complete, the Measurement Specialist reviews the calibration steps performed to see if meter calibration procedures are adequately followed by the Field Operator / Vendor. |
| **Summary Description:** the Measurement Specialist coordinates and reviews meter calibrations to ensure meters are appropriately calibrated and within the required frequency to provide accurate measurement and comply with the ERCB requirements. | |



### 20.1.3 Control Matrix for Meter Calibration process (Company-level)

| Control reference | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 1** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Measurement Specialist (MS) | The Measurement Specialist reviews meter calibration schedule prepared by the Field Operator to ensure that while preparing the schedule, the ERCB measurement and reporting requirements relating to frequency of meter calibrations are addressed. | Annual | Sign off by the Measurement Specialist on the meter calibrations schedule at the beginning of the year. | C | P | M | 1) Select sample calibration schedules.<br>2) Examine whether ERCB meter calibration requirements are addressed.<br>3) Examine whether the Measurement Specialist has reviewed the schedule.<br>4) Examine whether the Measurement Specialist has signed off on the schedule as evidence of review. |
| **Control 2** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Measurement Specialist (MS) | The Measurement Specialist reviews the calibration procedures to be followed by the Field Operator / Vendor to ensure that they are as per the ERCB guidelines for calibration of meters. | Typically monthly | Sign off by the Measurement Specialist on the meter calibrations procedures. | C | P | M | 1) Select sample calibration reports.<br>2) Examine whether the meter calibration procedures are as per the ERCB guidelines.<br>3) Examine whether the Measurement Specialist has reviewed the procedures.<br>4) Examine whether the Measurement Specialist has signed off on the procedures as evidence of review. |

| Control reference | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 3** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Measurement Specialist (MS) | The Measurement Specialist reviews the calibration results to ensure that the calibration is complete and the meters are performing as required. | Typically monthly | Sign off by the Measurement Specialist on the meter calibrations report. | C | D | M | 5) Select sample calibration reports.<br>6) Examine whether the meter calibration reports are complete.<br>7) Examine whether the meters are performing as required.<br>8) Examine whether the Measurement Specialist has reviewed the reports.<br>9) Examine whether the Measurement Specialist has signed off on the reports as evidence of review. |
| **Control 4** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Measurement Specialist (MS) | In cases where meter calibration is not complete, the Measurement Specialist reviews the calibration procedures to see if meter calibration procedures are adequate and appropriately followed by the Field Operator / Vendor. | Typically monthly | Sign off by the Measurement Specialist on the meter calibrations procedures. | C | D | M | 1) Select sample calibration reports where the calibration is incomplete.<br>2) Examine the procedures performed for the incomplete calibration reports for adequacy.<br>3) Examine whether the Measurement Specialist has reviewed the procedures.<br>4) Examine if the procedures were revised by the measurement specialist to adequately perform meter calibration.<br>5) Examine whether the Measurement Specialist has signed off on the revised procedures as evidence of review. |

## 20.2 Example 2: Meter Calibration Process (Facility-level controls)

### 20.2.1 Process Narrative for Meter Calibration process (Facility-level)

This example also applies to Operating area-level by changing the role Field Foreman to Area Foreman.

#### 20.2.1.1 Background

Meters must be calibrated / proven within the required frequency and in compliance with ERCB regulations to ensure they provide accurate measurement data.

#### 20.2.1.2 Associated risk of noncompliance:

Measurement device(s) calibrated / proven inappropriately or not within required frequency. This noncompliance results in inaccurate measurement.

#### 20.2.1.3 Process owners

1) Field Operator is responsible for
   a) Examining the ERCB meter calibration requirements.
   b) Preparing and reporting calibration schedule to the Field Foreman.
2) Field Foreman is responsible for
   a) Reviewing the calibration schedule.
   b) Reviewing the calibration procedures.
   c) Scheduling meter calibrations with the Field Operators and/or Vendors.
   d) Reviewing the meter calibration reports and ensuring procedures were followed.
   e) Preparing calibration reports and entering meter calibration data into the system.
3) Field Operator / Third-party vendor is responsible for
   a) Performing meter calibrations.
   b) Preparing and reporting the meter calibration Reports to the Field Foreman.

#### 20.2.1.4 Process description

1) At the beginning of the year the Field Operator, examines the ERCB meter calibration requirements and prepares a schedule of meter calibration for the current year. The Field Operator updates the Meter Data database with the schedule for the year.
2) The Field Operator forwards the schedule to the Field Foreman for the review of the schedule.
3) The Field Foreman reviews the calibration schedule for the year and arranges for calibration of meters as per the schedule.
4) The Field Foreman contacts Field Operators and/or Third-party vendors for the calibration of the meters.

5) The Field Foreman reviews the calibration procedures to be followed by the Field Operator / Vendor to ensure that they are as per the ERCB guidelines for calibration.

6) Once the Field Operators or Third-party vendors complete the calibration of the meters as per the schedule, they prepare a meter calibration report and update the Meter Data database. Meter calibration report is forwarded to the Field Foreman for review.

7) The Field Foreman reviews the results and determines whether:

   - the meters are performing as required; and
   - the meter calibration is complete.

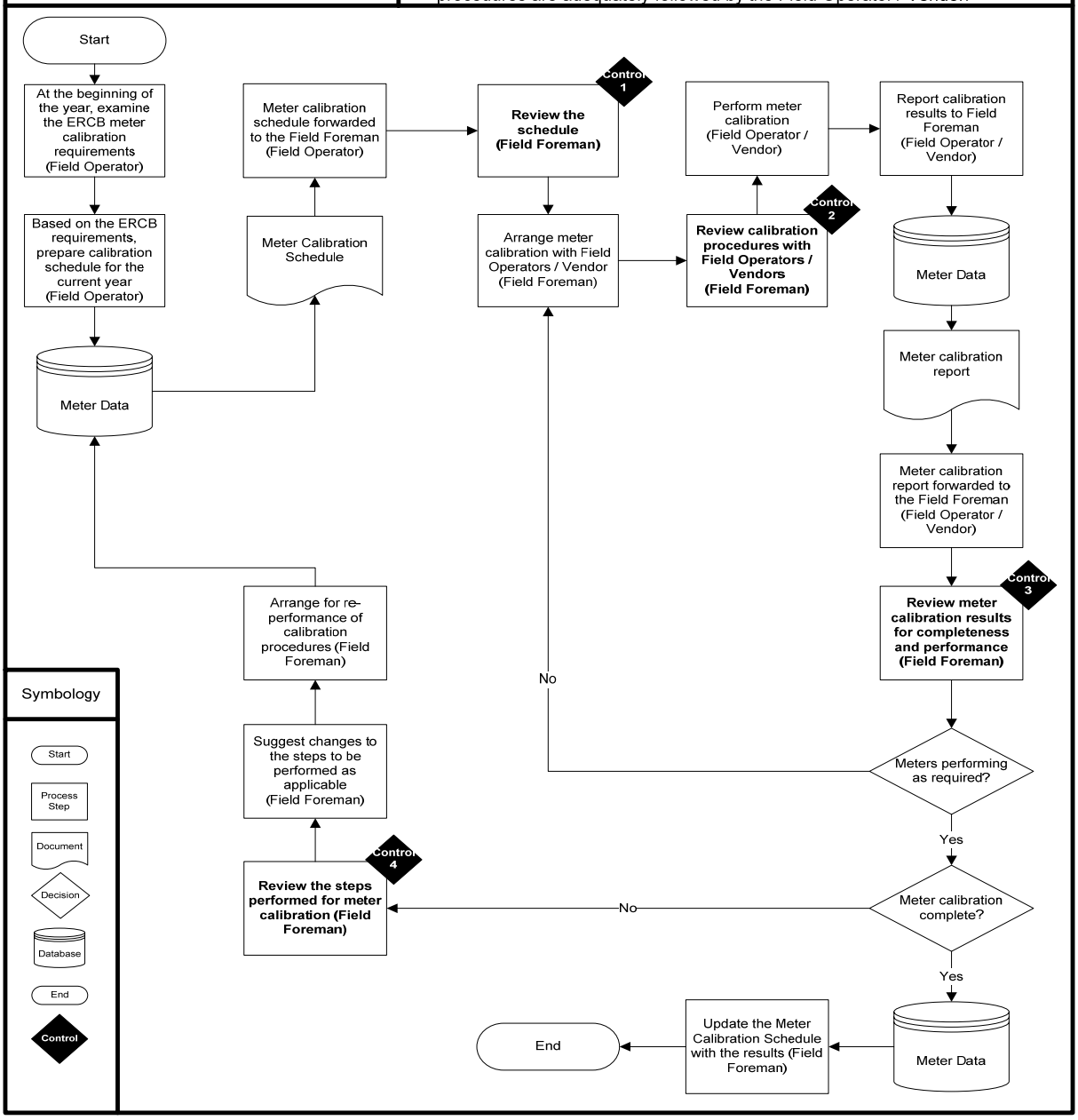
8) If the meters are performing as required and the meter calibration is complete, the Field Foreman updates the Meter Data database with the results and the meter calibration schedule with the completed meters.

9) In cases where the meters are not performing as required, the Field Foreman reschedules the meter calibration with the Field Operators or Third-party vendors. Procedures as mentioned from step 4 above are performed.

10) In cases where the meter calibration is not complete, the Field Foreman reviews the meter calibration procedures to see if the meters were calibrated in accordance with established procedures. The Field Foreman updates the meter calibration schedule and reschedules meter calibration for the specific instances. Procedures as mentioned from step 2 above are performed.

### 20.2.2 Process Map for Meter Calibration process (Facility-level)

| Operator XYZ | Controls: |
|---|---|
| Process: Meter Calibration | • **Control 1**: The Field Foreman reviews meter calibration schedule prepared by the Field Operator to ensure that the ERCB requirements relating to the meter calibration are addressed.<br>• **Control 2**:The Field Foreman reviews the calibration procedures to be followed by the Field Operator / Vendor to ensure that they are as per the ERCB guidelines for calibration.<br>• **Control 3**: The Field Foreman reviews the calibration results to ensure that the ERCB requirements are complied with and that the calibration is complete and the meters are performing as required.<br>• **Control 4**: In cases where meter calibration is not complete, the Field Foreman reviews the calibration steps performed to see if meter calibration procedures are adequately followed by the Field Operator / Vendor. |
| **Summary Description:** the Field Foreman coordinates and reviews meter calibrations to ensure meters are appropriately calibrated and within the required frequency to provide accurate measurement and comply with the ERCB requirements. | |



### 20.2.3 Control Matrix for Meter Calibration process (Facility-level)

| Control reference | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 1** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Field Foreman (FF) | The Field Foreman reviews meter calibration schedule prepared by the Field Operator to ensure that while preparing the schedule, the ERCB measurement and reporting requirements relating to frequency of meter calibrations are addressed. | Annual | Sign off by the Field Foreman on the meter calibrations schedule at the beginning of the year. | F | P | M | 1) Select sample calibration schedules.<br>2) Examine whether ERCB meter calibration requirements are addressed.<br>3) Examine whether the Field Foreman has reviewed the schedule.<br>4) Examine whether the Field Foreman has signed off on the schedule as evidence of review. |
| **Control 2** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Field Foreman (FF) | The Field Foreman reviews the calibration procedures to be followed by the Field Operator / Vendor to ensure that they are as per the ERCB guidelines for calibration of meters. | Typically monthly | Sign off by the Measurement Specialist on the meter calibrations procedures. | F | P | M | 1) Select sample calibration reports.<br>2) Examine whether the meter calibration procedures are as per the ERCB guidelines.<br>3) Examine whether the Field Foreman has reviewed the procedures.<br>4) Examine whether the Field Foreman has signed off on the procedures as evidence of review. |

| Control reference | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 3** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Field Foreman (FF) | The Field Foreman reviews the calibration results to ensure that the calibration is complete and the meters are performing as required. | Typically monthly | Sign off by the Field Foreman on the meter calibrations report. | F | D | M | 1) Select sample calibration reports.<br>2) Examine whether the meter calibration reports are complete.<br>3) Examine whether the meters are performing as required.<br>4) Examine whether the Field Foreman has reviewed the reports.<br>5) Examine whether the Field Foreman has signed off on the reports as evidence of review. |
| **Control 4** | Measurement device(s) calibrated / proven inappropriately and not within required frequency.<br>**NC 026** | Meters are calibrated / proven appropriately within the required frequency | Field Foreman (FF) | In cases where meter calibration is not complete, the Field Foreman reviews the calibration procedures to see if meter calibration procedures are adequate and appropriately followed by the Field Operator / Vendor. | Typically monthly | Sign off by the Field Foreman on the meter calibrations procedures. | F | D | M | 1) Select sample calibration reports where the calibration is incomplete.<br>2) Examine the procedures performed for the incomplete calibration reports for adequacy.<br>3) Examine whether the Field Foreman has reviewed the procedures.<br>4) Examine if the procedures were revised by the Field Foreman to adequately perform meter calibration.<br>5) Examine whether the Field Foreman has signed off on the revised procedures as evidence of review. |

## 20.3 Example 3: Well Test Process (Company-level controls)

### 20.3.1 Process Narrative for Well Tests process (Company-level)

#### 20.3.1.1 Background

Well tests must be performed within the prescribed frequency in compliance with the ERCB Directive requirements.

#### 20.3.1.2 Associated risk of noncompliance

Inaccurate proration testing procedures. This noncompliance results in inaccurate allocation of production volumes to wells and their working interest owners.

#### 20.3.1.3 Process owners and responsibilities

1) Field Operator is responsible for:
   a) Examining the ERCB proration testing procedures requirements.
   b) Preparing and reporting well test schedule to the Measurement Specialist.
2) Measurement Specialist is responsible for:
   a) Reviewing the well test schedule.
   b) Scheduling well tests with the Field Operators.
   c) Reviewing the well test reports and ensuring procedures were followed.
   d) Preparing well test reports and entering results into the production accounting system.

#### 20.3.1.4 Process description

1) At the beginning of the year the Field Operator, examines the ERCB proration testing procedure requirements and prepares a schedule of well tests for the current year. The Field Operator updates the Well Test Data database with the schedule for the month.
2) The Field Operator forwards the schedule to the Measurement Specialist for the review of the schedule.
3) The Measurement Specialist reviews the well test schedule for the month and arranges for well tests as per the schedule.
4) The Measurement Specialist contacts Field Operators for the well tests.
5) Measurement Specialist reviews the well test steps to be carried out by the Field Operator to make sure they comply with the ERCB proration testing procedures.
6) Once the Field Operators complete the well tests as per the schedule, they prepare a well test report and update the Well Test Data database. Well test report is forwarded to the Measurement Specialist for review.
7) The Measurement Specialist reviews the results and determines whether well test results are within an acceptable tolerance.

8) If the well test results are within the acceptable tolerance, the Measurement Specialist forwards the results to the Production accountant who updates the production accounting system with the results.

9) In cases where the well test results are not within the acceptable tolerance, the Measurement Specialist reviews the well test steps performed with the steps that were agreed on before the well test. The Measurement Specialist updates the well test steps, as applicable, and reschedules well test for the specific instances. Procedures as mentioned from step 2 above are performed.

### 20.3.2 Process Map for Well Tests process (Company-level)

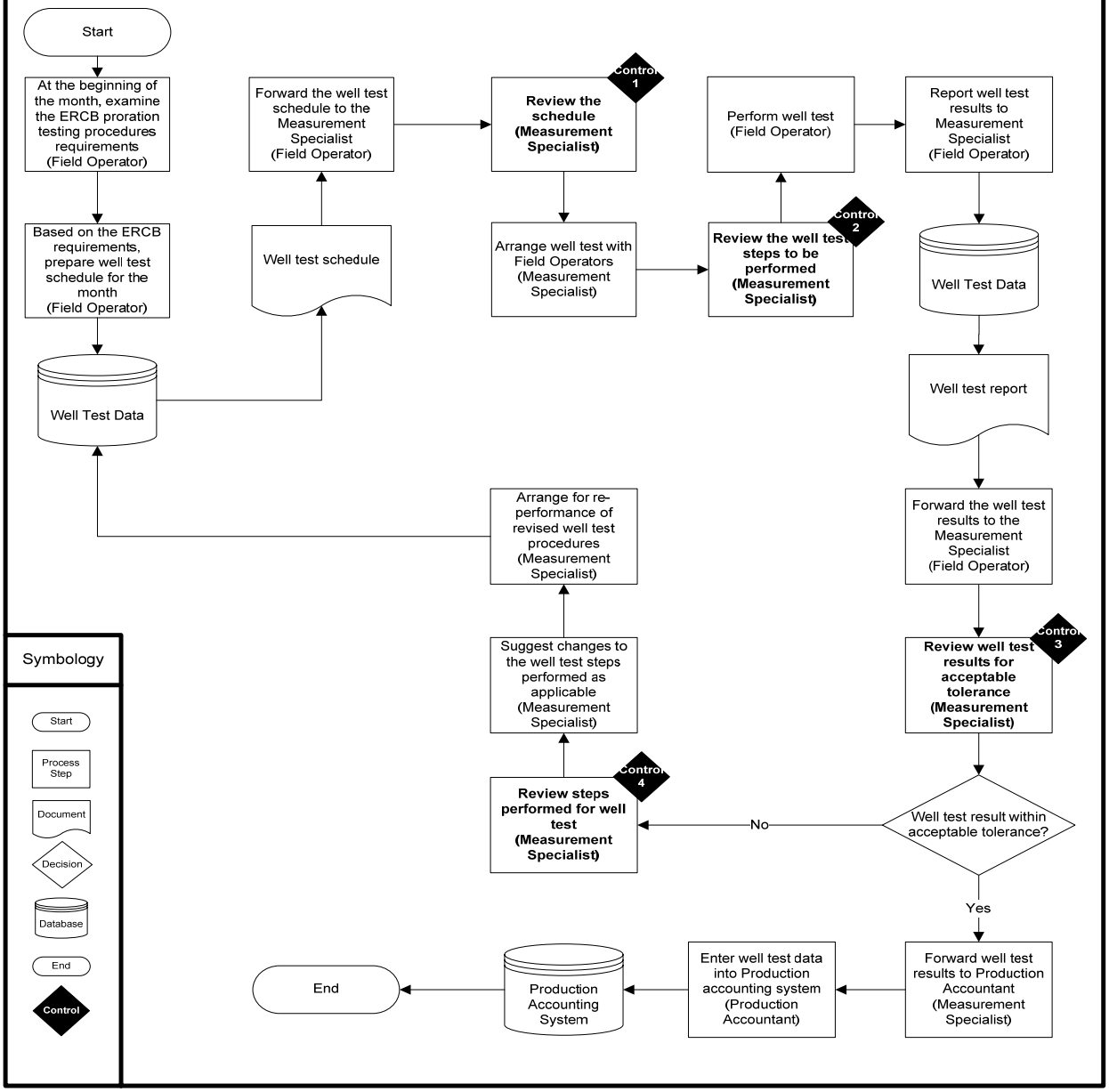
Operator XYZ

Process: Well Test

**Summary Description:** the Measurement Specialist reviews well test results to ensure well test ratios are reasonable, performed in accordance with ERCB requirements and are accurately captured in the Production Accounting System.

**Controls:**

- **Control 1:** The Measurement Specialist reviews well test schedule prepared by the Field Operator to ensure that the ERCB requirements relating to the proration testing procedures are addressed.
- **Control 2:** The Measurement Specialist compares the well test steps to be performed to the ERCB proration testing procedures to ensure that they comply with ERCB well test guidelines.
- **Control 3:** The Measurement Specialist reviews the well test results to ensure that the well test results are within acceptable tolerance and meets the ERCB requirements.
- **Control 4:** In cases where well test results are not within acceptable tolerance, the Measurement Specialist reviews the well test steps performed to see if they are as per the steps reviewed before the well test.



### 20.3.3 Control Matrix for Well Tests process (Company-level)

| Control reference in the flowchart | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 1** | Inaccurate proration testing procedures. **NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Measurement Specialist (MS) | The Measurement Specialist reviews well test schedule prepared by the Field Operator to ensure that the ERCB measurement and reporting requirements relating to the proration testing procedures are addressed. | Monthly | Sign off by the Measurement Specialist on the well test schedule at the beginning of the month. | C | P | M | 1) Select sample well test schedules.<br>2) Examine whether ERCB well test requirements are addressed.<br>3) Examine whether the Measurement Specialist has reviewed the schedule.<br>4) Examine whether the Measurement Specialist has signed off on the schedule as evidence of review. |
| **Control 2** | Inaccurate proration testing procedures. **NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Measurement Specialist (MS) | The Measurement Specialist compares the well test steps to be performed to the ERCB proration testing procedures to ensure that they comply with ERCB well test guidelines. | Monthly | Sign off by the Measurement Specialist on the well test steps. | C | P | M | 1) Select sample well test reports.<br>2) Examine whether the well test steps are comply with ERCB proration testing procedures.<br>3) Examine whether the Measurement Specialist has reviewed the test steps to be performed before the well test for compliance with ERCB proration test procedures.<br>4) Examine whether the Measurement Specialist has signed off on the test steps as evidence of review. |
| **Control 3** | Inaccurate proration testing procedures. **NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Measurement Specialist (MS) | The Measurement Specialist reviews the well test results to ensure that the well test results are within acceptable tolerance and meets the ERCB measurement and reporting requirements. | Monthly | Sign off by the Measurement Specialist on the well test report. | C | D | M | 1) Select sample well test reports.<br>2) Examine whether the well test reports are complete.<br>3) Examine whether the well test results is within the acceptable tolerance.<br>4) Examine whether ERCB proration test procedures are addressed.<br>5) Examine whether the Measurement Specialist has signed off on the reports as evidence of review. |

| Control reference in the flowchart | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 4** | Inaccurate proration testing procedures.<br>**NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Measurement Specialist (MS) | In cases where well test results are not within acceptable tolerance, the Measurement Specialist reviews the well test steps performed to see if they are as per the steps reviewed before the well test. | Monthly | Sign off by the Measurement Specialist on the well test steps. | C | D | M | 1) Select sample well test reports where the results are outside the acceptable tolerance.<br>2) Examine the well test steps performed to the steps agreed before the start of the well test.<br>3) Examine whether the Measurement Specialist has reviewed the steps.<br>4) Examine if the steps were revised by the Measurement Specialist to adequately re-perform well test.<br>5) Examine whether the Measurement Specialist has signed off on the revised steps as evidence of review. |

## 20.4 Example 4: Well Test Process (Facility-level controls)

### 20.4.1 Process Narrative for Well Tests process (Facility-level)

This example also applies to Operating area-level by changing the role Field Foreman to Area Foreman.

#### 20.4.1.1 Background

Well tests must be performed within the prescribed frequency in compliance with the ERCB Directive requirements.

#### 20.4.1.2 Associated risk of noncompliance

Inaccurate proration testing procedures. This noncompliance results in inaccurate allocation of production volumes to wells and their working interest owners.

#### 20.4.1.3 Process owners and responsibilities

1) Field Operator is responsible for
   a) Examining the ERCB proration testing procedures requirements.
   b) Preparing and reporting well test schedule to the Field Foreman.
2) Field Foreman is responsible for
   a) Reviewing the well test schedule.
   b) Scheduling well tests with the Field Operators.
   c) Reviewing the well test reports and ensuring procedures were followed.
   d) Preparing well test reports and entering results into the production accounting system.

#### 20.4.1.4 Process description

1) At the beginning of the year the Field Operator, examines the ERCB proration testing procedure requirements and prepares a schedule of well tests for the current year. The Field Operator updates the Well Test Data database with the schedule for the month.
2) The Field Operator forwards the schedule to the Field Foreman for the review of the schedule.
3) The Field Foreman reviews the well test schedule for the month and arranges for well tests as per the schedule.
4) The Field Foreman contacts Field Operators for the well tests.
5) Field Foreman reviews the well steps to be carried out by the Field Operator to make sure they comply with the ERCB proration testing procedures.

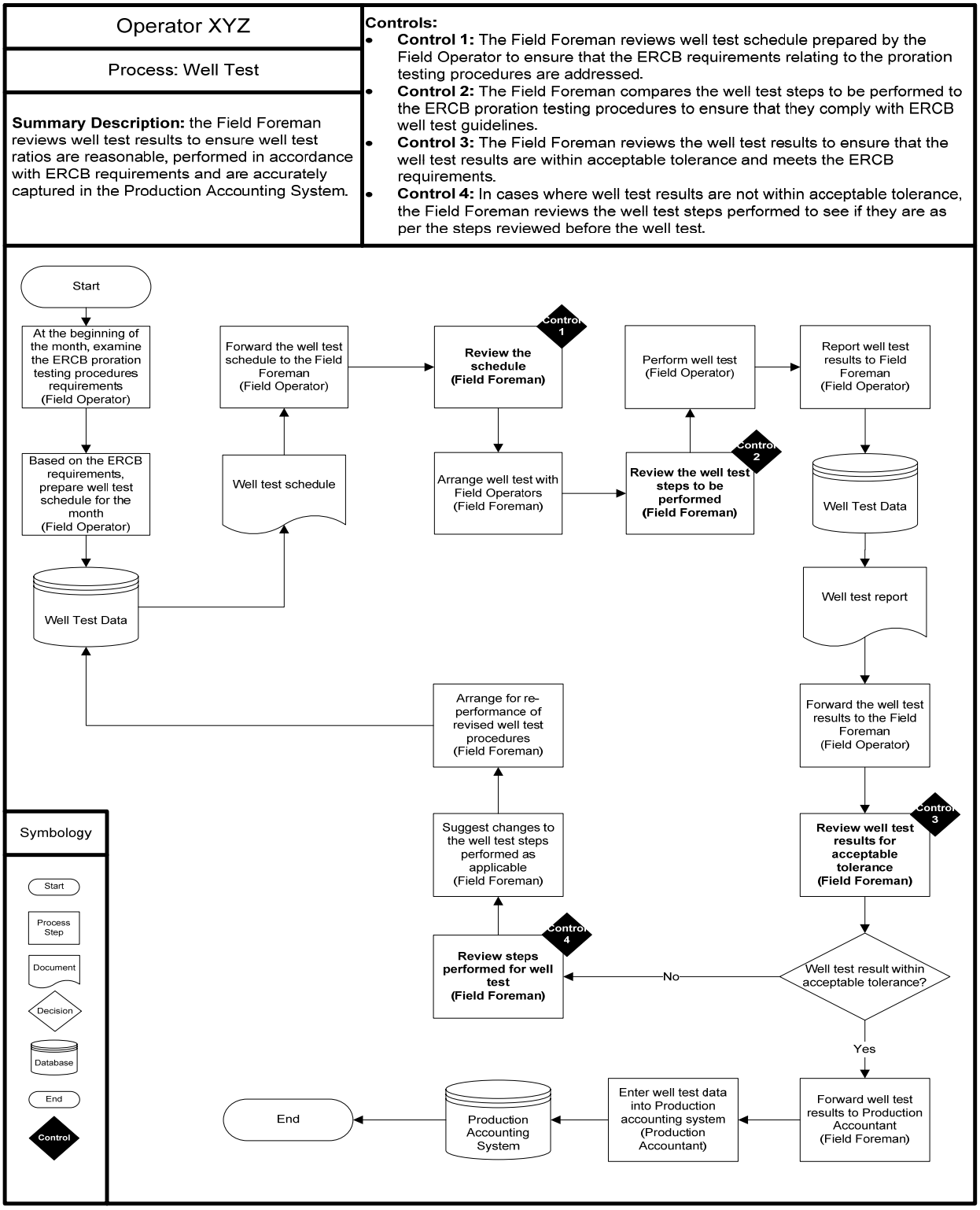
6) Once the Field Operators complete the well tests as per the schedule, they prepare a well test report and update the Well Test Data database. Well test report is forwarded to the Field Foreman for review.

7) The Field Foreman reviews the results and determines whether well test result within acceptable tolerance.

8) If the well test results are within the acceptable tolerance, the Field Foreman forwards the results to the Production accountant who updates the production accounting system with the results.

9) In cases where the well test results are not within the acceptable tolerance, the Field Foreman reviews the well test steps performed with the steps that were agreed on before the well test. The Field Foreman updates the well test steps, as applicable, and reschedules well test for the specific instances. Procedures as mentioned from step 2 above are performed.

### 20.4.2 Process Map for Well Tests process (Facility-level)



### 20.4.3 Control Matrix for Well Tests process (Facility-level)

| Control reference in the flowchart | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 1** | Inaccurate proration testing procedures.<br>**NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Field Foreman (FF) | The Field Foreman reviews well test schedule prepared by the Field Operator to ensure that the ERCB measurement and reporting requirements relating to the proration testing procedures are addressed. | Monthly | Sign off by the Field Foreman on the well test schedule at the beginning of the month. | F | P | M | 1) Select sample well test schedules.<br>2) Examine whether ERCB well test requirements are addressed.<br>3) Examine whether the Field Foreman has reviewed the schedule.<br>4) Examine whether the Field Foreman has signed off on the schedule as evidence of review. |
| **Control 2** | Inaccurate proration testing procedures.<br>**NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Field Foreman (FF) | The Field Foreman compares the well test steps to be performed to the ERCB proration testing procedures to ensure that they comply with ERCB well test guidelines. | Monthly | Sign off by the Field Foreman on the well test steps. | F | P | M | 1) Select sample well test reports.<br>2) Examine whether the well test steps are comply with ERCB proration testing procedures.<br>3) Examine whether the Field Foreman has reviewed the test steps to be performed before the well test for compliance with ERCB proration test procedures.<br>4) Examine whether the Field Foreman has signed off on the test steps as evidence of review. |
| **Control 3** | Inaccurate proration testing procedures.<br>**NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Field Foreman (FF) | The Field Foreman reviews the well test results to ensure that the well test results are within acceptable tolerance and meets the ERCB measurement and reporting requirements. | Monthly | Sign off by the Field Foreman on the well test report. | F | D | M | 1) Select sample well test reports.<br>2) Examine whether the well test reports are complete.<br>3) Examine whether the well test results is within the acceptable tolerance.<br>4) Examine whether ERCB proration test procedures are addressed.<br>5) Examine whether the Field Foreman has signed off on the reports as evidence of review. |

| Control reference in the flowchart | Risk of noncompliance | Control Objective | Control performer | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P) / Detective (D) | Automated (A) / Manual (M) | Evaluation Procedures |
|---|---|---|---|---|---|---|---|---|---|---|
| **Control 4** | Inaccurate proration testing procedures.<br>**NCE 011** | Proration testing to be conducted accurately and in compliance with D017 requirements. | Field Foreman (FF) | In cases where well test results are not within acceptable tolerance, the Field Foreman reviews the well test steps performed to see if they are as per the steps reviewed before the well test. | Monthly | Sign off by the Field Foreman on the well test steps. | F | D | M | 1) Select sample well test reports where the results are outside the acceptable tolerance.<br>2) Examine the well test steps performed to the steps agreed before the start of the well test.<br>3) Examine whether the Field Foreman has reviewed the steps.<br>4) Examine if the steps were revised by the Field Foreman to adequately re-perform well test.<br>5) Examine whether the Field Foreman has signed off on the revised steps as evidence of review. |

# 21 Appendix IV – Treatment of other procedures examples

## 21.1 Example – 1: Within the purview of the Operator

The following example illustrates how these procedures are to be interpreted for the purpose of EPAP when the procedures are performed within the control of the operator.

At the beginning of the year, the Internal Audit Department at Operator XYZ has submitted a plan to perform internal audit procedures around production accounting during the year.

The management of Operator XYZ involved in designing controls over ERCB measurement and reporting requirements, for the purpose of EPAP, understands that performance of the internal audit procedures around production accounting could mean that risk of noncompliance relating to inaccurate proration testing procedures is adequately addressed.

In this scenario, the management at the Operator XYZ need not design a separate control for the purpose of EPAP.

Following control matrix describes the control to address the risk of noncompliance of inaccurate proration testing procedures. operators should understand that for the purpose of EPAP, the control should be evaluated. The example below also describes, as an illustrative example, the evaluation procedures on how to evaluate the control described above.

Control Matrix:

| Control reference | Risk of noncompliance | Control Objective | Control owner | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P)/ Detective (D) | Automatic (A) / Manual (M) | Evaluation Procedures | Sample size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Control 1** | Inaccurate proration testing procedures | Proration testing procedures are accurate | Internal Audit Director | The Internal Audit Director arranges to perform annual audit of the production accounting department. The audit procedures include review of the accuracy of the proration testing procedures. | Annual | Internal audit final report signed and approved by the Internal Audit Director. | C | D | M | 1) Obtain the audit procedures performed by the Internal audit department.<br>2) Examine if the audit procedures indicate that the risk of noncompliance relating to proration testing procedures is addressed.<br>3) Examine whether the period covered by these procedures are within the Declaration period.<br>4) Examine whether the results of the procedures indicate whether the proration testing procedures are accurate.<br>5) Examine that the final audit report was signed by the Internal Audit Director. | (X) |

Conclusion: After the evaluation of the control, the operator may conclude whether the risk of noncompliance relating to proration testing procedures is adequately addressed or not.

## 21.2 Example – 2: Outside the purview of the Operator

The following example illustrates how these procedures are to be interpreted for the purpose of EPAP when the procedures are performed outside the control of the operator.

Operator ABC, who is the joint venture partner of Operator XYZ, has performed a joint venture audit on Operator XYZ during the year.

The management of Operator XYZ involved in evaluation of controls over ERCB measurement and reporting requirements, for the purpose of EPAP, understands that performance of the joint venture audit procedures could mean that risk of noncompliance relating to inaccurate proration testing procedures are adequately addressed at a particular facility.

In this scenario, the management at the Operator XYZ may interpret the results of the joint venture audit sufficiently, as explained in section 8.3.1 of the EPAP Operator's Handbook, to obtain a reasonable level of assurance over ERCB measurement and reporting requirements.

Following control matrix describes the control to address the risk of noncompliance of inaccurate proration testing procedures. Operators should understand that for the purpose of EPAP, the control should be evaluated. The example below also describes, as an illustrative example, the evaluation procedures on how to evaluate the control described above.

Control Matrix:

| Control reference | Risk of noncompliance | Control Objective | Control owner | Control description | Frequency | Evidence | Company Level (C) / Facility Level (F) | Preventive (P)/ Detective (D) | Automatic (A) / Manual (M) | Evaluation Procedures | Sample size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Control 1** | Inaccurate proration testing procedures | Proration testing procedures are accurate | Joint Venture Audit Director | The Joint Venture Audit Director reviews the joint venture audit results of Operator ABC and approves the final report. | Annual | Joint venture audit final report signed and approved by the Joint Venture Audit Director. | F | D | M | 1) Obtain the audit procedures performed by Operator ABC, the joint venture partner.<br>2) Examine if the audit procedures indicate that the risk of noncompliance relating to proration testing procedures is addressed.<br>3) Examine whether the period covered by these procedures are within the Declaration period.<br>4) Examine whether the results of the procedures indicate whether the proration testing procedures are accurate.<br>5) Examine that the final joint venture audit report was signed by the Joint venture Audit Director. | (X) |

Conclusion: After the evaluation of the control, the operator may conclude whether the risk of noncompliance relating to proration testing procedures is adequately addressed or not.

# 22 Appendix V – Trial Declaration

The ERCB recognizes that, for many operators, EPAP will involve many tasks were not previously part of their procedures and hence encourages operators to develop and test their Declaration processes early. A Declaration submitted during the first year is considered to be only a trial Declaration.

There are several purposes for performing a trial Declaration.

1) Test your internal processes and standards for getting a Declaration signed and to do that at a time when a delay or having to redo some work will not be critical.

2) Help you recognize what really needs to be done in the way of identifying and strengthening controls and related processes.

3) Obtain feedback from the ERCB on the quality and completeness of your trial Declaration.

## 22.1 Signing the Declaration

The most important issue to determine, before the Declaration is presented to the senior executives, is the amount and nature of supporting documentation that is required by the senior executives to confidently sign the Declaration. For this purpose, the senior executives should have been appraised of about the EPAP requirements prior to commencement of work relating to EPAP.

At the time of presenting the supporting documentation before the senior executives for signing the Declaration, the following quick list would be helpful:

1) Sample business processes, controls, evaluation procedures and results of evaluations.

2) Judgment applied in arriving at the conclusions.

3) Justifications for numbers appearing on the attachments to the Declaration.

4) An overview of the work that was carried out to date.

5) An evaluation plan for the next year.

Operators should remember that insufficient work or results are not reasons for not submitting a Declaration. The Declaration highlights the state of the operator's controls and evaluations. The Declarations is not about compliance with measurement and reporting requirements.

There is no penalty for declaring that the controls are deficient or absent; there is a penalty, however, after the first year, for not declaring.

## 22.2 Feedback from PAT

Once the declaration has been signed, operators are to securely store the hard copy as the PAT auditor may request to review the original during the course of the escalation process. A PAT auditor, who is assigned to each operator, will then review the Declaration and will contact the operator to discuss

- any questions the operator may have,
- any problems the operator may have encountered, and
- any issues the PAT's review has identified.

There are four aspects to an operator's Declaration that the PAT auditors review:

1) Coverage – Whether the coverage of the evaluations is sufficient to form an opinion.
2) Opinions – Whether the evaluation results reported on the Declaration support the opinions expressed in the Declaration.
3) Reasons for no controls – There are only two valid reasons for not having a control; either the requirements are not applicable to the operator or an exemption letter has been obtained from ERCB. PAT auditor reviews whether the interpretation of these reasons by the operator is correct.
4) Deficiencies – Whether the operator has prepared remediation plans for the deficiencies identified during the evaluation.

# 23 Appendix VI – Benefits of the Enhanced Production Audit Program

## 23.1 Benefits of EPAP to industry

### 23.1.1 Improved accuracy and completeness of volumetric data

Improved reliability in the accuracy and completeness of volumetric data is valuable for production and revenue forecasting and reservoir management. Furthermore, increased confidence in the data leads to increased confidence in the operator by shareholders and the public alike.

### 23.1.2 Appropriate level of assurance

Achieving an appropriate level of assurance over the accuracy and completeness of volumetric data is useful to support the assertions that the management of each operator makes in its annual report.

### 23.1.3 Improved volumetric business processes and controls

Improving volumetric business processes and controls is useful to each operator to demonstrate compliance with obligations

- as a common stream operator,
- to joint venture partners, or
- as a shipper.

Improving volumetric business processes and controls leads to operating cost reductions by decreasing the number of revisions and amendments required both in production accounting and joint venture accounting.

### 23.1.4 Higher quality volumetric data

Higher quality volumetric data is useful to each operator to

- optimize production management, and
- maximize reserves recovered.

### 23.1.5 Improved compliance with ERCB measurement and reporting requirements

Improving volumetric business processes and controls is useful to each operator to demonstrate compliance with ERCB measurement and reporting requirements. Compliance avoids the cost, effort and potential embarrassment associated with enforcement.

## 23.2 Benefits of EPAP to the ERCB

### 23.2.1 Improved accuracy and completeness of volumetric data

Standardization of operator processes raises the accuracy and completeness of data reported to the ERCB. Improved accuracy and completeness of volumetric data improves the ability of the ERCB to perform its regulatory processes that requires volumetric data.

### 23.2.2 Appropriate level of assurance

An appropriate level of assurance over the accuracy and completeness of volume data is useful to the ERCB for the purposes of

- determining the state of compliance with ERCB measurement and reporting requirements, and
- enabling the ERCB to state that it is continuing to fulfill its mandate with respect to measurement and reporting requirements.

### 23.2.3 Increased level of assurance

Implementing EPAP greatly increase the audit coverage of oil & gas producing facilities. As a result, the level of assurance that the ERCB can state over operator compliance with measurement and reporting requirements greatly increases.

### 23.2.4 Contained audit costs

By bringing all operators into EPAP, it is possible for the ERCB to contain its audit costs while greatly increasing the level of assurance over compliance with measurement and reporting requirements.

### 23.2.5 Improvements over current state of compliance

By bringing all operators into EPAP, the ERCB understanding of the current state of compliance with ERCB measurement and reporting requirements increase greatly.

### 23.3 Benefits of EPAP to the Province of Alberta

An increased level of assurance over compliance with measurement and reporting requirements provides the people of Alberta with confidence that Crown resource ownership is being well managed.

## 24 Definitions

**Business Process:** A collection of related, structured tasks that achieve a specific business goal.

**Control:** A process designed to provide a reasonable level of assurance that the underlying business process ensures compliance with ERCB measurement and reporting requirements.

**Control Activities:** the policies and procedures that help ensure management directives are carried out.

**Control Deficiency:** The state that exists when controls do not provide a reasonable level of assurance over the achievement of compliance with ERCB measurement and reporting requirements. The reason for the deficiency can exist in either the controls or the underlying business process. The deficiency can exist in either the control or the underlying business process.

There are two types of control deficiencies:

1) Design deficiency: a deficiency relating to the design exists when the control is missing or a control is designed such that even if the control operates as designed, reasonable level of assurance over compliance with ERCB measurement and reporting requirements cannot be achieved.

2) Operation deficiency: a deficiency relating to the operation exists when a properly designed control is not operating as intended and as a result reasonable level of assurance over compliance with ERCB measurement and reporting requirements cannot be achieved. The operation deficiency can exist in the control operation or in the underlying business process.

**Evaluation of Controls:** A process by which an operator evaluates the effectiveness of the design and operation of a control in addressing the risk of noncompliance. The evaluation of controls may include assessing the underlying business process.

**Facility:** Any building, structure, installation, equipment, or appurtenance, including wells, over which the ERCB has jurisdiction and that is connected to or associated with the recovery, development, production, handling, processing, treatment, or disposal of hydrocarbon-based resources or any associated substances or wastes. Note that for the purposes of this directive, the definition of facility

- focuses on facilities for which data is reported to the PRA or the ERCB, and
- includes wells.

**Failure:** In the context of EPAP, “failure” means the control is not operating as intended.

**Infrastructure:** Infrastructure is the environment in the organization established by the senior executives in response to the needs of the organization in addressing ERCB requirements by

- developing effective organizational structure, procedure manuals, operating instructions, job descriptions and training materials that defines authority and responsibility;
- communicating management's philosophy, codes of conduct and operating style to all the employees and evidence that employees have confirmed their knowledge and understanding;
- enhancing integrity, ethics, and competence of all the employees;
- managing effectively the internal and external influences that affect the operator's operations; and
- establishing effective human resources policies and procedures for hiring and managing the employees.

**Measurement:** The term "measurement" as used in ERCB directives generally means "measurement, accounting, and reporting." While measurement is the determination of a volume, accounting and reporting are integral components of measurement in that after a fluid volume is "measured," mathematical procedures (accounting) may have to be employed to arrive at the desired volume to be "reported." Notwithstanding this all-encompassing definition, for sake of emphasis this directive refers to "measurement and reporting" recognizing that separate functions take place in the field and in the office.

**Operator: T**he person or organization who keeps records and submits production reports to the PRA or the ERCB for that facility is the Operator of Record for that facility, whether or not that organization is also the sole licensee or approval holder for all parts of the facility. Note that for the purposes of measurement and reporting, the emphasis is on the organization that reports to the PRA or the ERCB, not the organization that may control or undertake the day-to-day operations and activities at all or part of a facility.

**Reasonable:** The terms "reasonable", "reasonably", and "reasonableness", in the context of EPAP, do not imply a single conclusion or methodology, but encompass the full range of appropriate potential conduct, conclusions or methodologies upon which operators may reasonably base their decisions.

**Reasonable Level of Assurance:** "Level of Assurance" is the degree of confidence one has in a statement; a "reasonable" level of assurance certainly does not mean absolute assurance, and might not even mean a "very high" level of assurance, but it is enough to make it comfortable, for all practical purposes, for senior executives to sign their declaration. Exactly what that level is depends on many factors, including the executive, the organizational culture, and the resources required to increase that level of assurance.

**Remediation:** a process, effected by an operator's management, to

1) correct control deficiencies identified by the operator during the evaluations of controls, and

2) correct deficiencies identified by the ERCB

**Residual risk:** The risk remaining after an operator takes actions to reduce the impact and likelihood of the risks of noncompliance, including control activities in responding to the risk of noncompliance.

**Senior executive:** the person who holds provincial authority, within the operator's management, to direct resources to execute and measure progress of

1) evaluations of controls, and

2) remediation.

## 25 Further Reading

For further reading on topics that are mentioned in this document refer to the following:

1) *ERCB Directive 007*: *Volumetric and Infrastructure Requirements*. http://www.ercb.ca/docs/documents/directives/directive007.pdf.

2) *ERCB Directive 017: Measurement Requirements for Upstream Oil and Gas Operations*. http://www.ercb.ca/docs/documents/directives/Directive017.pdf.

3) ERCB *Directive 019: ERCB Compliance Assurance - Enforcement*. http://www.ercb.ca/docs/documents/directives/Directive019.pdf.

4) Oil and Gas Conservation Regulations. http://www.ercb.ca/docs/requirements/actsregs/ogc_act.pdf.

5) Sarbanes-Oxley Act of 2002 - Management's Internal Controls and Procedures for Financial Reporting. http://www.sec.gov/rules/proposed/33-8138.htm.

6) Ontario Securities Commission Requirement 52-109 National Instrument and Companion Policy. http://www.osc.gov.on.ca/Regulation/Rulemaking/Current/rrn_part5_index.jsp.

7) The International Federation of Accountants 'Handbook of International Auditing, Assurance, and Ethics Pronouncements,' 2008 Edition Part I. http://www.ifac.org/Members/DownLoads/2008_IAASB_Handbook_Part_I-Compilation.pdf.

8) COSO integrated framework. http://www.coso.org/IC-IntegratedFramework-summary.htm.

9) PCAOB Auditing Standard No.2. http://www.pcaob.org/Rules/Rules_of_the_Board/Auditing_Standard_2.pdf.

10) PCAOB Auditing Standard No.5. http://www.pcaob.org/Rules/Rules_of_the_Board/Auditing_Standard_5.pdf.

11) IIA Professional Guidance on Sarbanes-Oxley Section 404: A guide for management by control practitioners - SOX 404 Guide for Management. http://www.theiia.org/guidance/additional-resources/sarbanes-oxley-resources/.

12) Audit Sampling - AICPA Audit Guide. http://www.cpa2biz.com/AST/Main/CPA2BIZ_Primary/AuditAttest/TopicSpecificGuidance/PRDOVR~PC-012530/PC-012530.jsp.