# Purpose and Content

## Purpose

This Condition Assessment Report (CAR) shall be completed in compliance with Section 5, *Condition Assessment*, of Appendix L, *Additional Criteria for Dam Systems*, in the *Environmental Resource Permit Applicant’s Handbook Volume I (General and Environmental)*, Chapter 62-330, Florida Administrative Code. Inspection information is to be submitted in support of an application for an individual Environmental Resource Permit to alter an existing dam system with a High Hazard Potential or Significant Hazard Potential classification (as defined in Section 3, *Downstream Hazard Potential*, in Appendix L). The information in this form may be completed through a combination of new and historical inspections that were performed within the past five years, as long as the data are still representative of the dam condition. Copies of the original inspection reports are to be included in the Condition Assessment Report (CAR).

## Content

This form is grouped into five sections: Purpose and Content, General Information, Dam Inspection, Overall Condition Assessment, and Certification. Information for the dam, dam owner(s), and dam owner’s engineer are shown in the General Information section. The dam and appurtenant structure components of the crest, upstream and downstream slopes, plunge pool, principle and emergency spillways, instrumentation, outlet pipe(s), stilling basin, waterbody structures, downstream hazards, drawings, pictures, and underwater video are listed in the Dam Inspection section. The overall condition assessment ratings of Satisfactory, Fair, Poor, and Unsatisfactory are defined in the Overall Condition Assessment section. Lastly, the certification statement to include in the submittal is provided in the Certification section.

# General Information

## Date of Inspection(s):

## Date CAR Prepared:

## Dam Information

1. Name of Dam:

2. National Inventory of Dams Identification Number:

3. Location-City/County:

4. Hazard Classification:

5. Name of Waterbody:

6. Purpose of Dam/Waterbody:

7. Total Surface Area:

8. Crest Elevation:

9. Crest Width:

10. Crest Length:

11. Upstream Water Depth:

12. Downstream Ground Elevation:

13. Upstream Water Elevation:

14. Crest Material:

15. Upstream Slope:

16. Downstream Slope:

## Dam Owner’s Information (add sections for each additional dam owner)

1. Name(s):

2. Address:

3. Phone Numbers: a.       (landline) b.       (cell)

5. Email Address:

## Dam Owner’s Representative Information

1. Name:

3. Phone Numbers: a.       (landline) b.       (cell)

4. Email Address:

## Dam Owner’s Engineer

1. Name of Engineering Firm or Engineer:

2. Florida Professional Engineer License Number:

3. Mailing Address:

4. Phone Numbers: a.       (landline) b.       (cell)

5. Email Address:

# Dam Inspection

### Crest

* 1. How would you describe the vegetation on the crest? (Check all that apply)

Recently Mowed [ ]  Overgrown [ ]  Good Cover [ ]  Sparse [ ]

Other (describe):

* 1. Are there any trees or other inappropriate vegetation on the crest?

Yes [ ]  No [ ]

If yes, describe (type of vegetation, size, location, etc.):

* 1. Is there a paved road or driveway on the crest?

Yes [ ]  No [ ]

If yes, describe the condition (for example, good condition, numerous cracks, newly paved, etc.):

* 1. Are there any depressions, ruts or holes on the crest?

Yes [ ]  No [ ]

If yes, describe (length and width, location, direction of cracking, etc.):

* 1. Are there any cracks on the crest?

Yes [ ]  No [ ]

If yes, describe (length and width, location, direction of cracking, etc.):

* 1. Other observations on the crest:

### Upstream Slope

1. What is the reservoir level in feet (ft) today?

At Normal Pool       ft Above Normal Pool       Ft Below Normal Pool       ft

1. How would you describe the vegetation on the upstream slope? (Check all that apply)

Recently Mowed [ ]  Overgrown [ ]  Good Cover [ ]  Sparse [ ]

Other (describe):

1. Are there any trees or other inappropriate vegetation on the slope?

Yes [ ]  No [ ]

If yes, describe (type of vegetation, size, location, etc.):

1. Are there any depressions, bulges, ruts, or holes (such as animal burrows) on the slope?

Yes [ ]  No [ ]

If yes, describe (size, location, etc.):

1. Are there any eroded areas on the slope (such as wave erosion along the shoreline)?

Yes [ ]  No [ ]

If yes, describe (size of area, location, severity, etc.):

1. Are there any cracks, sloughs, or slides (vertical cliffs) on the slope?

Yes [ ]  No [ ]

If yes, describe (length, width, height, location, etc.):

1. Is there any type of slope protection along the shoreline (such as riprap)?

Yes [ ]  No [ ]

If yes, describe what type and its condition (for example, riprap - adequate, inadequate, sparse, etc.):

1. Other observations on the upstream slope:

### Downstream Slope

1. How would you describe the vegetation on the downstream slope? (Check all that apply)

Recently Mowed [ ]  Overgrown [ ]  Good Cover [ ]  Sparse [ ]

Other (describe):

1. Are there any trees or other inappropriate vegetation on the slope?

Yes [ ]  No [ ]

If yes, describe (type of vegetation, size, location, etc.):

1. Are there any depressions, bulges, ruts, or holes (such as animal burrows) on the slope?

Yes [ ]  No [ ]

If yes, describe (size, location, etc.):

1. Are there any eroded areas on the slope (such as along abutment contacts)?

Yes [ ]  No [ ]

If yes, describe (size of area, location, severity, etc.):

1. Are there any cracks, sloughs or slides (vertical cliffs) on the slope?

Yes [ ]  No [ ]

If yes, describe (length, width, height, location, etc.):

1. Are there any wet areas or areas of hydrophilic (lush, water-loving) vegetation?

Yes [ ]  No [ ]

If yes, describe (length, width, height, location, etc.):

1. Do any wet areas indicate seepage through the dam (such as rust-colored, stained water)?

Yes [ ]  No [ ]  N/A [ ]

If yes, describe (for example, new area of seepage, no change from past observations, size of area, location, etc.):

1. Are there any leaks (flowing water) from the slope or beyond the toe of the dam?

Yes [ ]  No [ ]

If yes, describe (location, rate of flow, turbidity of flow, etc.):

1. Other observations on the downstream slope:

### Plunge Pool

1. Is there any type of erosion protection around the plunge pool (such as riprap)?

Yes [ ]  No [ ]

If yes, describe what type and its condition (for example, riprap - adequate, inadequate, obstructed by vegetation):

1. Is there any erosion around the plunge pool?

Yes [ ]  No [ ]

If yes, describe (size of area, location, severity, etc.):

1. Other observations around the plunge pool:

### Principal and Emergency Spillways

* 1. What types of spillways are on the dam and what is their composition (such as corrugated metal, concrete or siphon pipe; concrete or earth channel)?

Principal Spillway       Emergency Spillway       Other

Describe:

* 1. Has the emergency spillway activated (had flow) since the last inspection?

Yes [ ]  No [ ]

If yes describe (date(s) of flow, reason for activation, depth of flow, erosion damage, etc.):

* 1. For pipe spillways, is the intake obstructed in any way (such as with excessive debris)?

Yes [ ]  No [ ]

If yes, describe (type of debris, reason for obstruction, etc.):

* 1. For pipe spillways, what is the condition of any trash racks (for example, adequate, inadequate, damaged)?
	2. For pipe spillways, are there any visible cracks, separations or holes in the pipe(s) (intake or outlet)?

Yes [ ]  No [ ]

If yes, describe (location, width of crack or separation, etc.):

* 1. For pipe spillways, are there any apparent leaks in the pipe(s)?

Yes [ ]  No [ ]

If yes, describe (location, rate of flow from leak, etc.):

* 1. For pipe spillways, how would you describe the overall condition of the pipe(s)? (Check all that apply)

Functioning Normally [ ]  Not Functional [ ]  Deteriorated [ ]

Damaged [ ]  Adequate [ ]  Inadequate [ ]

* 1. For concrete or earth channel spillways, is the entrance or channel obstructed in any way?

Yes [ ]  No [ ]

If yes, describe (type of obstruction, location, etc.):

* 1. For earth channel spillways, how would you describe the vegetation in the spillway? (Check all that apply)

Recently Mowed [ ]  Overgrown [ ]  Good Cover [ ]  Sparse [ ]

Other (describe):

* 1. For earth channel spillways, are there any trees or other inappropriate vegetation in the spillway?

Yes [ ]  No [ ]

If yes, describe (type of vegetation, size, location, etc.):

* 1. For earth channel spillways, are there any eroded areas in the spillway?

Yes [ ]  No [ ]

If yes, describe (size of area, location, severity, etc.):

* 1. For concrete channel spillways, are there any cracks or holes in the spillway?

Yes [ ]  No [ ]

If yes, describe (width of crack or hole, location, etc.):

* 1. For concrete channel spillways, are there any leaks or evidence of undermining (flow under the concrete)?

Yes [ ]  No [ ]

If yes, describe (location, rate of flow from leak, indicators of undermining, etc.):

* 1. For earth or concrete channel spillways, how would you describe the overall condition of the spillway? (Check all that apply)

Functioning Normally [ ]  Not Functional [ ]  Deteriorated [ ]  Damaged [ ]  Adequate [ ] Inadequate [ ]

* 1. Other observations on the spillways:

### Instrumentation

1. Are there any toe drains at the downstream toe or any other seepage drains on the dam?

Yes [ ]  No [ ]

If yes, describe the condition (for example, clogged, free flowing, deteriorated, good condition, etc.):

1. For drains, is an animal guard installed at the outlet of each drain?

Yes [ ]  No [ ]

If no, which drains lack animal guards?

1. For drains, measure the rate of flow from each drain and record below (use additional pages if necessary):

|  |  |  |  |
| --- | --- | --- | --- |
| Designation/Location of Drain | Flow Rate | Flow Rate in GPM\* | Turbidity Flow(Describe clear, muddy, etc.) |
|       |       |       |       |
|       |       |       |       |
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1. Are there any piezometers on the dam?

Yes [ ]  No [ ]

If yes, describe the condition (for example, good condition, damaged, etc.):

1. For piezometers, does each piezometer have a cap with a lock?

Yes [ ]  No [ ]

If no, which piezometers need caps (to prevent rainwater intrusion) and/or locks (to prevent tampering)?

1. For piezometers, are you able to take a measurement (depth to water) in each piezometer?

Yes [ ]  No [ ]

If yes, record depth to water (in feet) in each piezometer, record on a separate page and attach to this form.

1. Are there any other monitoring devices on the dam?

Yes [ ]  No [ ]

If yes, describe what type and the condition (for example, monitoring wells - good condition, damaged, etc.):

1. Other observations on instrumentation:

### Outlet Pipe

1. Any water flowing outside of discharge pipe through the impounding structure. (Check all that apply)

Functioning Normally [ ]  Not Functional [ ]  Deteriorated [ ]

Damaged [ ]  Adequate [ ] Inadequate [ ]

1. Describe any deficiencies:

### Stilling Basin

1. Deterioration of concrete structures (Check all that apply)

Functioning Normally [ ]  Not Functional [ ]  Deteriorated [ ]  Damaged [ ]  Adequate [ ]  Inadequate [ ]

1. Exposure of rebar?

Yes [ ]  No [ ]

1. Deterioration of basin sloes and repairs done:
2. Any obstruction to flow:

### Waterbody Structures

1. Deterioration of concrete structures (Check all that apply)

Functioning Normally [ ]  Not Functional [ ]  Deteriorated [ ]  Damaged [ ]  Adequate [ ]  Inadequate [ ]

 Describe:

1. Exposure of rebar?

Yes [ ]  No [ ]

1. Deterioration of basin slopes and any repairs done:
2. Any obstruction to flow:

### Downstream Hazard Issues

1. Deterioration of concrete structures (Check all that apply)

Functioning Normally [ ]  Not Functional [ ]  Deteriorated [ ]  Damaged [ ]  Adequate [ ]  Inadequate [ ]

1. Exposure of rebar?

Yes [ ]  No [ ]

1. Deterioration of basin sloes and any repairs done:
2. Any obstruction to flow:
3. Are there homes downstream from the dam?

Yes [ ]  No [ ]

Approximate distance:

### Drawings and Photographs

At a minimum, photographs should be taken of the crest, upstream slope, downstream slope, principle and emergency spillways, and any other notable features. (Example: structures, seepages, ruts, slope failure, etc.)

List of drawings:

List of photographs:

### Underwater Videos

At a minimum, videos of the internal length of each conduit, including principal spillway, auxiliary spillways, and other conduits embedded or intercepting the dam upstream and downstream slopes and crest should be provided.

List of videos:

# Overall Condition Assessment

**(Check one)**

**SATISFACTORY** [ ]  **FAIR** [ ]  **POOR** [ ]  **UNSATISFACTORY** [ ]

Condition Assessment

Assessment that best describes the condition of the dam based on available information.

Satisfactory

Fair

Poor

Unsatisfactory

A dam safety deficiency is defined as a load capacity limit or other issue that can result in a failure of the dam or appurtenant structure. It is a characteristic or condition that does not meet the applicable minimum regulatory criteria.

Normal operations are defined as loading on the dam resulting from day-to-day pool operations to achieve authorized purposes in accordance with minimum state or federal criteria.

Condition Assessment definitions are as follows:

Satisfactory

No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the minimum applicable state or federal regulatory criteria or tolerable risk guidelines.

Typical Circumstances:

* No existing deficiencies or potentially unsafe conditions are recognized, with the exception of minor operational and maintenance items that require attention.
* Safe performance is expected under all loading conditions including the design earthquake and design flood.
* Permanent risk reduction measures (reservoir restrictions, spillway modifications, operating procedures, etc.) have been implemented to eliminate identified deficiencies.

Fair

No existing dam safety deficiencies are recognized for normal operating conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action. Note: Rare or extreme event is defined by the regulatory agency based on their minimum applicable state criteria.

Other Circumstances:

* Lack of maintenance requires attention to prevent developing safety concerns.
* Maintenance conditions may exist that require remedial action greater than routine work and/or secondary studies or investigations.
* Interim or permanent risk reduction measures may be under consideration.

Poor

A dam safety deficiency is recognized for normal operating conditions which may realistically occur. Remedial action is necessary. This rating may also be used when uncertainties exist for critical analysis parameters used to identify a potential dam safety deficiency. Investigations and studies are necessary.

Other Circumstances:

* Dam has multiple deficiencies or a significant deficiency that requires remedial work.
* Lack of maintenance (erosion, sinkholes, settlement, cracking, unwanted vegetation, animal burrows, inoperable outlet gates) has affected the integrity or the operation of the dam under normal operational conditions and requires remedial action to resolve.
* Critical design information is needed to evaluate the potential performance of the dam. For example, a field observation or a review of the dam’s performance history has identified a question that can only be answered by review of the design and construction history for the dam. Uncertainty arises when there is no design and/or construction documentation available for review and additional analysis is needed to better understand the risk associated with operation under normal operational conditions.
* Interim or permanent risk reduction measures may be under consideration.

Unsatisfactory

A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

Typical Circumstances:

* A critical component of the dam has deteriorated to unacceptable condition or failed.
* A safety inspection indicates major structural distress (excessive uncontrolled seepage, cracks, slides, sinkholes, severe deterioration, etc.), advanced deterioration, or operational deficiencies which could lead to failure of the dam or its appurtenant structures under normal operating conditions.
* Reservoir restrictions or other interim risk reduction measures are required.
* A partial or complete reservoir drawdown may be mandated by the state or federal regulatory agency.

Supplemental Comments (Add narrative on your overall assessment category and recommendations for improvements):

# Certification by Registered Professional

I, a registered professional qualified in the evaluation of dam systems, hereby certify, by signing, dating, and sealing, that the information provided in this report has been examined by me and found to be true and correct in my professional judgment.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Printed Name

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Signature Date