LCB File No. R124-02

PROPOSED REGULATION OF THE DIVISION OF WATER RESOURCES OF THE STATE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

NOTICE OF WORKSHOP TO SOLICIT COMMENTS ON PROPOSED REGULATION

July 23, 2002

The State Engineer is proposing the adoption of regulations pertaining to chapter 535 of the Nevada Administrative Code. Workshops have been set for the following times and locations:

--9:00 am to 12:00 noon on August 27, 2002, at 555 E. Washington St., Room 4412, Las Vegas.
--9:00 am to 12:00 noon on August 28, 2002, at 123 West Nye Lane, Room 217, Carson City.
--9:00 am to 12:00 noon on August 29, 2002, at 720 Court Street, Meeting Room, Elko.

The purpose of the workshops is to solicit comments from all interested persons on the following general topics relating to the construction, reconstruction or alteration of a dam that may be addressed in the proposed regulations:

--Emergency Action Plans
--Safety of dams inspector certification
--Design standards for flood protection and seismic stability

A copy of all materials relating to the proposal may be obtained at the workshop, on the Internet at http://ndwr.state.nv.us or by contacting the Division of Water Resources at the above address. A nominal copying fee will be charged.

This Notice has been sent to all persons on the agency's mailing list for administrative regulations and posted at the following locations:

Nevada State Library
100 North Stewart Street
Carson City, Nevada

Division of Water Resources
123 West Nye Lane
Carson City, Nevada

Division of Water Resources
850 Elm Street, Room 12
Elko, Nevada

Division of Water Resources
400 Shadow Lane, Suite 203
Las Vegas, Nevada

Churchill County Library
553 South Maine Street
Fallon, Nevada

Douglas County Library
1625 Library Lane
Minden, Nevada

Goldfield Public Library
Fourth & Crook Street
Goldfield, Nevada

Eureka Branch Library
10190 Monroe Street
Eureka, Nevada

Humboldt County Library
85 East 5th Street
Winnemucca, Nevada

Lincoln County Library
93 Main Street
Pioche, Nevada

Lyon County Library
20 Nevin Way
Yerington, Nevada

Mineral County Library
First & A Street
Hawthorne, Nevada

Tonopah Public Library
171 Central Street
Tonopah, Nevada

Pershing County Library
1125 Central Avenue
Lovelock, Nevada

Storey County Library
95 South R Street
Virginia City, Nevada

Washoe County Library
301 South Center
Reno, Nevada

White Pine County Library
950 Campton Street
Ely, Nevada

Battle Mountain Branch Library
P.O. Box 141
Battle Mountain, Nevada 89820

NOTICE OF INTENT TO ACT UPON A REGULATION
Notice of Hearing for the Adoption of Regulations of the
State Engineer, Division of Water Resources

July 23, 2002

The State Engineer will hold public hearings at the following times and locations:

--1:00 pm to 4:00 pm on August 27, 2002, at 555 E. Washington St., Room 4412, Las Vegas.
--1:00 pm to 4:00 pm on August 28, 2002, at 123 West Nye Lane, Room 217, Carson City.
--1:00 pm to 4:00 pm on August 29, 2002, at 720 Court Street, Meeting Room, Elko.

The purpose of the hearings is to receive comments from all interested persons regarding the adoption of regulations that pertain to chapter 535 of the Nevada Administrative Code.

The following information is provided pursuant to the requirements of NRS 233B.0603:

1. These regulations are promulgated to enhance the safety of dams program in Nevada without stifling innovation in the design and construction of dams and to promote the maintenance, upgrading, and safe operation of existing dams.
2. The entire body of regulations to be adopted is new and addresses all aspects of the State Engineer's administration of the safety of dams program in Nevada including permitting, inspection and requirements of dam owners.
3. The estimated economic effect of the regulation on the business regulated is;
   a. No adverse effect is anticipated and a benefit will derive from the clear delineation of required information and duties.
   b. Immediate and long term effects will be a reduction in delays due to misunderstanding the level of preparation necessary for dam construction and operation.
4. The estimated economic effect of the regulation on the public is;
   a. No adverse effect is anticipated and a benefit will derive from overall greater safety.
   b. No immediate or long-term effects will be noticed by the public.
5. The State Engineer currently administers the safety of dams program in Nevada so no additional costs will be incurred by enforcement of the proposed regulation.
6. The proposed regulations stand-alone and duplicate no functions of any other agency.
7. The proposed regulations are not required by federal law.
8. The proposed regulations establish a new fee for certification as a safety of dams inspector or certification of an independent safety of dams program, should the certification be implemented.

Persons wishing to comment upon the proposed action of the State Engineer may appear at the scheduled public hearing or may address their comments, data, views or arguments in written form to State Engineer, Nevada Division of Water Resources, 123 West Nye Lane, Carson City, Nevada 89706. Written submissions must be received by the State Engineer on or

before August 30, 2002. If no person who is directly affected by the proposed action appears to request time to make an oral presentation, the State Engineer may proceed immediately to act upon any written submissions.

A copy of this notice and the regulation to be adopted will be on file at the State Library, 100 Stewart Street, Carson City, Nevada for inspection by members of the public during business hours. Additional copies of the notice and the regulation to be adopted will be available at Nevada Division of Water Resources offices at:

123 West Nye Lane, Suite 246, Carson City, Nevada
850 Elm Street, Room 12, Elko, Nevada
400 Shadow Lane, Suite 203, Las Vegas, Nevada

And in all counties other than Carson City, Elko, or Clark, at the main public library, for inspection and copying by members of the public during business hours. This notice and the text of the proposed regulation are also available in the State of Nevada Register of Administrative Regulations, which is prepared and published monthly by the Legislative Counsel Bureau pursuant to NRS 233B.0653 and on the Internet at http://www.leg.state.nv.us. Copies of this notice and the proposed regulation will also be mailed to members of the public upon request. A reasonable fee may be charged for copies if it is deemed necessary.

Upon adoption of any regulation the agency, if requested to do so by an interested person, either before adoption or within 30 days thereafter, will issue a concise statement of the principal reasons for and against it's adoption or incorporate therein its reason for overruling the consideration urged against its adoption.

This notice of hearing has been posted at the following locations:

Nevada State Library
100 North Stewart Street
Carson City, Nevada

Division of Water Resources
123 West Nye Lane
Carson City, Nevada

Division of Water Resources
850 Elm Street, Room 12
Elko, Nevada

Division of Water Resources
400 Shadow Lane, Suite 203
Las Vegas, Nevada

Churchill County Library
553 South Maine Street
Fallon, Nevada

Douglas County Library
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Yerington, Nevada

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Hawthorne, Nevada

Tonopah Public Library
171 Central Street
Tonopah, Nevada

Pershing County Library
1125 Central Avenue
Lovelock, Nevada

Storey County Library
95 South R Street
Virginia City, Nevada

Washoe County Library
301 South Center
Reno, Nevada

White Pine County Library
950 Campton Street
Ely, Nevada

Battle Mountain Branch Library
P.O. Box 141
Battle Mountain, Nevada 89820

PROPOSED REGULATION OF THE DIVISION OF WATER RESOURCES OF THE STATE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

Rules for adoption into regulations under the Nevada Administrative Code as chapter 535 "Safety of Dams"

Authority. These regulations are drafted under the provisions of NRS § 532.120(1).

Purpose. These regulations are promulgated to enhance the safety of dams program in Nevada without stifling innovation in the design and construction of dams and to promote the maintenance, upgrading, and safe operation of existing dams.

"Dam" as used in this regulation means a structure that stores or diverts water for a beneficial purpose.

For the purposes of this regulation "water" includes any substance that may be impounded by a dam including but not limited to tailings, slimes, organic waste, sewage or any other potentially mobile fluid or semi-fluid substance.

Water right requirement. All dams constructed for storing water must have a valid water right for the water to be impounded pursuant to NRS chapters 533 and 534.

"Water right" for the purposes of this regulation means a valid appropriation of the public waters of the state of Nevada as provided by NRS chapters 533 and 534.

A water right allowing the diversion, storage or beneficial use of impounded water must be obtained from the State Engineer before commencing construction on any dam.

Should the water right associated with any dam be moved, cancelled, denied, withdrawn or declared forfeit, the dam must be rendered incapable of impounding any water (decommissioned).

For the purposes of this regulation "storing" does not include the temporary detention of floodwater or debris by a structure specifically designed for such a purpose or the temporary detention of storm surcharge upon the normal pool of a reservoir.

For the purposes of this regulation, "impounding" means the detention of water without respect to the duration of detention.

Levees and road embankments. The provisions of this regulation do not apply to the construction of embankments if they are:

Designed as levees or floodwalls intended to constrain water of a creek or river to its natural floodplain in the event of an extreme event (flood) or;

Designed for the sole purpose of supporting a roadbed, path or other means of conveyance for the transportation of vehicles, pedestrians, trains or bulk commodities which is:

Free-draining with a residence time for impounded storm water of less than 24 hours and;

Capable of passing a 1% chance of exceedence storm runoff without overtopping.

Hazard classification. All dams in the state of Nevada will be assigned a hazard classification based on the immediate consequences of failure of the dam.

High hazard dams are those that carry a high probability (approaching a certainty) that failure will cause a loss of human life.

Significant hazard dams are those that carry a lower probability that failure will cause a loss of human life and/or carry a high probability that failure will cause extensive economic loss or lifeline disruption.

Low hazard dams are those that carry a very low probability (approaching zero) that failure will cause a loss of human life and little if any economic loss will occur.

The hazard classification is assigned by the State Engineer based upon the downstream conditions and in no way reflects the safety or lack of safety of the dam.

The hazard classification may change during the life of the dam due to encroaching development or removal of dwellings or facilities from the downstream area.

Dam size.

"Height" for the purpose of these regulations means the maximum difference in elevation between the crest and the toe of the dam.

"Crest" for the purpose of these regulations means the nominal top horizontal surface of the dam excluding railings or parapet walls.

"Toe" for the purposes of these regulations means the downstream contact between the outer shell of the dam and the natural ground surface.

For determining if a permit is required pursuant to NRS § 535.010(2.b), only that capacity impounded above the anticipated elevation of the toe of the dam shall be considered.

Small dams are those that are less than 20 feet in height and impound less than 100 acre-feet of water.

Medium dams are those that are less than 50 feet in height and impound between 100 and 10,000 acre-feet of water.

Large dams are those that are greater than 50 feet in height or impound more than 10,000 acre-feet of water.

Work notification. The State Engineer must be notified of any plan for the construction, reconstruction, modification, removal or decommission of any dam within the state of Nevada.

Notification must consist of a written description of the proposed work including:

Owner's name, mailing address and telephone number.

Engineer's name, mailing address and telephone number.

Source of water to be impounded.

Description of valid water right for the water to be impounded.

Date on which construction is anticipated to commence.

Location by bearing and distance to a known section corner from a reference point on the dam. The reference point must be on the long axis at the station where the toe is at the lowest elevation. If no single point meets this criterion then the reference point must be at the intersection of the long axis and the principle outlet centerline.

Estimate of dam length, height, and volume.

Capacity of reservoir to be impounded.

Plans consisting of at least three sheets, 11"x17" in size, containing:

Cover sheet with owner name, dam or project name and dam location plat showing a referenced section corner.

Second sheet with plan view of dam and impoundment showing cross-section alignments.

Third sheet showing cross sections at outlet, spillway and maximum embankment height. It is possible for one cross section to incorporate each of the three required features.

The plans must be prepared by an engineer or by an owner/builder pursuant to the provisions of NRS chapters 623, 624 and 625.

"Owner", for the purpose of this regulation, means an person, company, corporation, governmental agency or quasi-governmental agency that:

Causes a dam to be built, rebuilt or modified or;

Owns or controls the real property on which a dam is constructed or;

Owns or controls the real property inundated by the reservoir created or;

Owns the water right that is impounded or diverted by the dam or;

Is the successor in interest in the chain of title specifically mentioning the dam or;

Has been identified by the State Engineer as being the responsible party for the dam.

If a dam has multiple owners as above defined, each owner must be party to an agreement for the maintenance of the dam and regulation of water impounded by the dam. A copy of the agreement must be filed with the State Engineer.

"Engineer", for the purposes of this regulation, means a person who is a licensed professional engineer pursuant to NRS chapter 625 and NAC chapter 625 and who is in responsible charge of engineering work related to a dam project.

Notification must be submitted to the State Engineer not less than thirty (30) days before planned initiation of construction.

The State Engineer will reply in writing to the notification. The reply will state:

That the notification was received in good order and no permit is required, or

That the notification was received in good order and a permit will be required, or

The notification was received but additional information is necessary to determine if a permit will be required.

Notifications for which a permit is not required will be cataloged with a unique number preceded by "Js" as in Js-###.

A notification for which a permit is required will be held until an application for a permit is received and then the notification and response will be filed with the application.

Upon receipt of a written response to a notification that falls under Section 7.6.a above, the owner may proceed with construction of the described dam pursuant to all other applicable federal, state or local requirements.

Making an application for a permit to construct a dam is considered notification for the purposes of this section.

Construction, reconstruction, modification, removal or decommission of a dam without approval pursuant to this notification process is a violation and may result in civil penalties or removal of the dam at the owner's expense.

Application for a permit. Any person who proposes to construct a dam for which a permit is required by response to notification or pursuant to NRS § 535.010(2.b), shall make an application in triplicate on a format specified by the State Engineer and be accompanied by the statutory filing fee pursuant to NRS § 533.435.

An application for a permit will not be considered until a supporting design package and statutory filing fee have been submitted.

The format for application must consist of a completed application form, provided by the State Engineer, and supporting design package comprised of the; design report, geotechnical report, specifications for construction, a set of plans and any additional information (addendums) necessary for a complete understanding of the proposed project.

The entire application and design package must be submitted in triplicate.

The copies of the design package may be bound together in a single report or submitted as separately bound reports.

The applicant shall not commence work on the project until the application has been approved (permitted).

The application form must:

Bear the original signature of the proposed owner of the dam or an authorized agent acting on the owner's behalf and;

Have all questions answered and;

Not be bound together with any of the supporting design package.

The design report must:

Bear the wet stamp and signature of the engineer under which it was prepared and;

Contain a discussion of the design approach, selection of the inflow design flood (IDF), selection of the maximum credible earthquake (MCE) and description of the proposed structure and;

For concrete dams, contain stability calculations under critical reservoir and seismic loading conditions for sliding, overturning, cracking, and abutment failure and;

For earth embankments, contain slope stability calculations under static, seismic, rapid fill and rapid draw down conditions and;

Contain calculations for the IDF, spillway capacity, storm surcharge, freeboard, and outlet capacity and;

Contain a discussion of downstream hazard in the event of a failure or large release of water and;

Contain a discussion of any identified special conditions that may exist at the site.

The geotechnical report must:

Bear the wet stamp and signature of the engineer under which it was prepared and;

Include or reference in the plans a plat or plats showing each test pit, borehole or other exploration site and;

Show lithology at each exploration site including standard penetration test (SPT) results or other means of estimating bearing capacity and;

Include estimates of suitability of site for proposed project, foundation bearing capacity and expected settlement and;

Indicate soil properties in the foundation, abutments, reservoir area and borrow areas and;

Show depth to groundwater and permeability of foundation materials and;

Explore seismic hazards in the area and;

Include a discussion of any special conditions identified at the site.

The specifications must:

Bear the wet stamp and signature of the engineer under which they were prepared and;

Address all aspects of construction and;

Include a schedule for quality control testing and;

Be submitted on standard 8 ½" x 11" paper and;

Not reference other common specifications without a specific citation.

The plans must:

Bear the wet stamp and signature of the engineer under which they were prepared and;

Be submitted in one color on standard 24" x 36" paper and;

Consist of as many sheets as necessary to adequately depict the proposed work but comprise at least five sheets containing:

Cover sheet with owner name, dam or project name and dam location plat showing at least one section corner;

Second sheet showing elevation-capacity and elevation-area curves;

Third sheet with plan view of dam and impoundment showing cross-section alignment and the reference point of the dam, tied to a found section corner and identified by latitude and longitude;

Fourth sheet showing cross sections at outlet, spillway and maximum embankment height;

Fifth sheet showing appurtenant works and details.

All elevations must be from the U.S.G.S. 1984 Mean Seal Level (MSL) datum.

Show pre construction and post construction ground lines on all cross sections and;

Show section corners and post construction elevation contours on at least one plan view and;

Show a tie with bearing and distance to a found section corner from a reference point on the dam. The reference point must be on the long axis at the station where the toe is at the lowest elevation. If no single point meets this criterion then the reference point must be at the intersection of the long axis and the principle outlet centerline.

Not include spurious or excessive detail such as plantings, streets, buildings, pipelines, etc. unless their location directly affects construction of the project and;

Not incorporate exaggerated dimensions unless absolutely necessary for clarity, i.e. the vertical and horizontal scale must be the same.

The addendums must:

Be pertinent and necessary for a complete understanding of the project and;

Bear the wet stamp and signature of the engineer under which they were prepared (if necessary) and;

Be submitted on standard 8 ½" x 11" paper for text and no larger than 11" x 17" paper for illustrations.

Design and construction standards.

It is strongly advised that an engineer provide design and construction oversight for all dams and diversions. It is also strongly advised that a qualified contractor carry out all construction.

All dams built pursuant to a permit must have design and construction oversight provided by an engineer. It is also strongly advised that a qualified contractor carry out all construction.

A qualified contractor must construct all significant and high hazard dams or dams classified as large or medium in size.

Small, low hazard dams for which a permit is not required may be designed by empirical methods.

Appropriate factors of safety must be incorporated in all stability and strength calculations. A factor of safety shall not be chosen that is less than 1.3 for static loading or 1.0 for pseudo-static (seismic) loading.

Permitting process. Applications will be initially reviewed in the order in which the statutory filing fee was received and will be cataloged with a unique number preceded by a "J" as in J-###.

Submittal of an application will be considered notification pursuant to Section 7 of these regulations.

The applicant will be notified of any deficiencies in the application and given sufficient time in which to correct the deficiencies, not to exceed ninety (90) days.

Deficient applications for which requested supplemental information has not been supplied will be rejected and any fees submitted will be forfeit.

Applications for which the statutory filing fees have not been submitted will be rejected.

Applications for which insufficient statutory fees have been submitted will be rejected and the submitted portion of the fee returned.

One complete copy of the application with supporting documents will be transmitted to the Nevada Division of Wildlife for comment pursuant to NRS § 535.020.

Upon receipt of all requested information the application will undergo engineering review.

Upon satisfactory completion of the review process, the application will be endorsed by the State Engineer (permitted). The endorsed application and supporting documents together comprise the permit.

Terms of approval will be attached to the permit with one copy retained in the file and one copy each to:

The permitee;

NDOW;

NDEP.

One copy of the supporting documents will be stamped and signed by the State Engineer and retained in his records and;

One copy of the supporting documents will be stamped and signed by the State Engineer and returned to the permitee for construction.

The permitee will be responsible for complying with all the terms of the permit.

Federal agencies. Pursuant to NRS § 535.010(7), projects constructed by the United States Army Corps of Engineers (Corps) or the United States Department of the Interior, Bureau of Reclamation (Bureau) are not required to obtain a permit.

Corps and Bureau projects must still have a water right pursuant to Section 3 above.

The Corps and Bureau shall file a notification pursuant to Section 7 above and duplicate sets of plans and specifications for dam projects within the state of Nevada.

No other federal agency is summarily exempt from the notification or permitting process.

Federal agencies not otherwise listed may have allowances elsewhere provided by law.

Corps or Bureau projects to be turned over to a local cooperator upon completion for administration, maintenance or outright must be permitted by the cooperator before relinquishing control of the project.

Penalties. Any person who violates these provisions pursuant to NRS § 535.010(8) is guilty of a misdemeanor.

Approval to impound may be revoked under certain circumstances as described in Section 13.

A permit may be closed, removing authorization to build and maintain a dam, under certain circumstances as described in Section 16.

A reservoir may be ordered lowered, drained or the diversion to the reservoir closed under certain circumstances as described in Section 14.

A dam may be removed under certain circumstances as described in NRS § 535.050 and the owner will be responsible for any costs for the removal.

Impoundment of water. Water may not be impounded behind any permitted dam until an approval to impound has been granted by the State Engineer.

Dams in existence prior to July 1, 1951, will be authorized to impound that volume of water for which a water right had been established pursuant to NRS chapters 533 and 534 by that date. Should the dam's owner desire or be required to reconstruct or alter the dam a new permit will be required pursuant to NRS § 535.010 and all aspects of this regulation will apply. No additional water may be impounded without a water right and an approval to impound pursuant to this regulation.

Approval to impound will be granted in writing to the permitee upon successful completion of the permit terms pertaining to construction, submittal of a complete proof of completion of work (PCW) and any requested additional information. The approval to impound will include the estimated capacity of the reservoir to the maximum conservation elevation, the height of the dam, the necessary freeboard to be maintained and any other operating conditions that may be pertinent.

PCW must be submitted in the following form:

Proof of completion of work cover sheet, supplied by the State Engineer and:

Ten dollar ($10) filing fee and;

Engineer's certification that the construction was in substantial compliance with the approved plans and specifications and;

Quality assurance /quality control (QA/QC) documentation and;

"As-built" plans and;

Any other documents required by the permit terms.

"'As-built' plans" means for the purposes of the regulation, record drawings prepared in accordance to Section 8.8 above, from surveys made during construction and upon completion of the structure.

PCW will be reviewed and any missing or additional information or correction of deficiencies will be requested in writing.

An approval to impound may be requested for an interim completion less than that originally permitted (phased construction) upon receipt of a properly completed PCW.

Should any dam or embankment be ordered breached or maintained in a drained condition by the State Engineer, no water may be subsequently impounded behind the structure until the conditions of the order have been satisfied and a new approval to impound is issued pursuant to these regulations.

A temporary approval to impound may be granted at the State Engineer's discretion. A request for temporary approval to impound must include:

- ***Reason for the necessity of a temporary approval to impound and;***
- ***Timetable for the submittal of the deficient or missing information or documents and;***
- ***Completed proof of completion of work cover sheet with ten dollar ($10) filing fee if they have not already been filed and;***
- ***Design engineer's certification that the construction was in substantial compliance with the approved plans and specifications.***

A temporary approval to impound will carry a specific expiration date not to exceed ninety (90) days from the date of issue.

Approval to impound may be revoked by the State Engineer when:

- ***The water right has been moved, cancelled, denied, withdrawn or forfeited.***
- ***The terms of the permit have been violated.***
- ***The dam has been operated in an unsafe manner.***

The dam has been damaged to such an extent that its failure is reasonably possible in the opinion of the State Engineer.

The permit is closed pursuant to Section 16 of these regulations, due to failure, decommission, or intentional breach of the dam.

Inspections of dams. The State Engineer will, from time to time, inspect or cause to be inspected all dams within the state of Nevada pursuant to NRS § 535.030. The inspections will be for the purpose of determining the safety of the dams.

Dams under construction may be inspected at any time to assess the foundation preparation, material placement and compaction, outlet construction, armoring, filling or other detail.

Every attempt will be made to inspect all dams within the state of Nevada at the State Engineer's direction at least once in every five (5) years.

All dams classified as significant hazard will be inspected at the State Engineer's direction at least once in every three (3) years.

All dams classified as high hazard will be inspected at the State Engineer's direction at least once a year (annually). "Once a year" is understood to mean that the average interim between inspections is no more than 365 days. This is to allow for inspection under differing conditions and seasons.

All dams inspected at the direction of the State Engineer must be conducted under the supervision of an engineer.

At the State Engineer's discretion, an inspector under contract to the State Engineer or an inspector who is part of a certified program may make an inspection for the State Engineer.

The owner of record in the office of the State Engineer will be sent a report of the inspection detailing any repairs that are deemed necessary and any maintenance recommendations.

Should necessary repairs not be made in a reasonable amount of time or if a hazardous condition exists that may in the opinion of the State Engineer prove to threaten life or property, the State Engineer may order the owner of the dam to lower, drain or cease diverting water into the reservoir until the condition has been rectified and sufficient proof made to the State Engineer of the adequacy of the repair(s).

Should immediate remedial actions be deemed necessary to protect life and property pursuant to NRS § 535.030(3), the State Engineer will cause to be posted at the head works of the dam a notice stating the authority under which the action was taken and the telephone number and address of his office.

The State Engineer or his assigns may enter onto private land for the purposes of administering these regulations.

The provisions of this section do not apply to Corps or Bureau dams except that every effort will be made by the State Engineer to cooperate in any inspection conducted by the Corps or Bureau within the state of Nevada.

Inspections by the State Engineer are intended as a supplement to the dam owner's regular inspection schedule.

Dam storage fee. The State Engineer will charge a fee to all owners of private, non-agricultural dams for approved storage pursuant to NRS § 533(1).

"Approved storage" for the purposes of this regulation, means the capacity stated in the most recent authorization to impound issued pursuant to Section 13 above. Storm

surcharge within the freeboard of the reservoir is not part of the approved storage if the surcharge may be immediately disposed of by spilling, releasing through the outlet or pumping.

The fee will be charged in October of each fiscal year and is due and payable immediately. Amendments to the fee amount will be made as necessary and the dam owner charged appropriately.

The fee will be calculated based upon the most recent approval to impound or file closure up to December 31 of each fiscal year. Approvals to impound or file closures issued after December 31 will reflect in the fee for the following fiscal year.

The material stored in the reservoir and its status is irrelevant in the determination of approved storage.

Storm water detention dams that have an unregulated outlet and are free draining do not store water for the purposes of this regulation.

Closure and reclamation.

"Closure" for the purposes of this regulation means, the permanent revocation of permission to construct, maintain, or impound water behind a dam under a particular permit.

"Decommission" for the purposes of this regulation means, the rendering of a dam incapable of detaining any significant quantity of water either through contouring, breaching, armoring, regrading or any combination thereof.

"Reclamation" for the purposes of this regulation means, the general restoration of disturbed landscape to a more natural state by contouring, regrading, aerating, seeding, removing improvements, or other method.

Any owner contemplating the decommission of a dam and the subsequent closure of the file shall first notify the State Engineer of his intention pursuant to Section 7, above.

A dam permit file will not be closed unless:

The dam has been breached intentionally or through mishap or;

The dam and impoundment have been decommissioned or;

The dam was never built pursuant to the terms of the permit or;

All water rights associated with the dam have been moved, cancelled, denied, withdrawn or forfeit or;

The permitee withdraws the application or permit.

The owner of a dam that is the subject of a closed permit may apply for a new permit pursuant to Section 8 of these regulations.

***Dam removal.** Notification shall be made to the State Engineer pursuant to Section 7, above, before removing, breaching, decommissioning, or otherwise removing from service any dam. No dam may be abandoned without notifying the State Engineer.*

***Emergency action plans.** All owners or operators of dams in Nevada should have and maintain an emergency action plan (EAP) for each dam.*

An EAP should be developed for all dams in Nevada and dam owners are strongly encouraged to do so.

All permits issued after September 30, 2002, for high hazard dams will require an EAP as a condition for gaining an approval to impound.

Owners shall develop EAPs for all permitted high hazard dams prior to September 30, 2004.

All permits issued after September 30, 2004, for significant hazard dams will require an EAP as a condition for gaining an approval to impound.

Owners shall develop EAPs for all permitted significant hazard dams prior to September 30, 2006.

Each EAP must be prepared under the direction of an engineer to the format specified by the State Engineer, include responses to all foreseeable situations and include inundation maps.

Each EAP must be kept current by periodic update and exercise.

Extreme events (floods). All permitted dams must be able to accommodate an extreme precipitation event without failure of the dam or other unintended release of water.

The inflow design flood (IDF) must be calculated for the tributary watershed and passed through the reservoir and dam without causing a failure of the dam or other unintended release of water.

The IDF must be selected dependant upon the intended purpose, hazard classification, and size of the dam.

The minimum IDF chosen for design purposes shall be:

Probable maximum flood (PMF) for all high hazard dams, large significant hazard dams and dams without spillways.

The greater of a ½ PMF or 0.2% chance of exceedence flood for small and medium significant hazard dams.

1% chance of exceedence flood for all other dams for which a permit is required.

A lesser flood may be allowed if an incremental damage analysis indicates to the State Engineer that a lesser event is appropriate.

All dams must have a means of safely accommodating the IDF through:

An outlet and spillway designed to accommodate the IDF, or

Adequate reservoir capacity to store the IDF, or

A watershed diversion, or

Overtopping protection of the embankment, or

A combination of strategies.

Watershed diversions in lieu of spillways for the protection of dam embankments must be designed to accommodate the greater of the IDF or five times the expected life of the impoundment and will only be considered for structures that are temporary in nature.

All dams must have a freeboard adequate to protect against overtopping by wave run-up and reservoir fetch above the storm surcharge elevation.

In lieu of wave run-up and reservoir fetch calculation; the freeboard must not be less than three feet (3') above the storm surcharge elevation.

"Storm surcharge elevation" for the purposes of these regulations means that elevation that the water surface reaches resultant from an IDF being applied to a reservoir that is at the maximum conservation elevation.

"Maximum conservation elevation" for the purposes of this regulation means that elevation to which water is allowed to be stored pursuant to the approval to impound.

Storm water detention dams that are designed to be and operated in a normally drained state will be considered to have a maximum conservation elevation at the upstream invert elevation of the low level outlet.

Extreme events (earthquakes). All permitted dams must be able to accommodate an extreme motion event without failure of the dam or other unintended release of water.

The seismic response to a maximum credible earthquake (MCE) of all permitted dams and their foundations must be estimated for potential liquefaction, loss of material strength, settlement, ground displacement, and wave action due to landslide or seiche. All numeric analysis of seismic response shall be for the normal maximum loading condition.

Pseudo static stability analysis of earth embankments must include a description of the assumptions used in the derivation of the seismic coefficient (k).

Low hazard and small significant hazard earth dams need not have a numeric analysis of seismic response if the following conditions are met:

The static slope stability factor of safety is 1.5 or greater under normal maximum loading and;

The site acceleration is no greater than 0.2 g (6.5 ft./sec.2) and;

The foundation and/or embankment materials are not prone to liquefaction and;

The embankment slopes are 3H on 1V or flatter for an earth embankment or 2H on 1V or flatter for a free draining rock-fill embankment.

Owner's responsibilities. All dam owners shall be responsible for:

Operating and maintaining their dams and appurtenant works in a safe manner and in accordance with all applicable permits, laws, and regulations.

Periodic inspection of their dams and appurtenant works on a schedule approved by the State Engineer and maintain records of all inspections and any actions taken to correct any deficiencies identified.

Taking all necessary action to prevent failure of their dam and subsequent loss of life, property damage or lifeline disruption.

Notifying the State Engineer and local responsible authorities of any problems or unusual events at the dam or any change in the ownership of the dam, reservoir, shoreline or water right.

Modifying their dam to meet changing downstream hazard conditions or watershed modifications.

Safety of dams certification. The State Engineer may initiate a program for the certification of safety of dams inspectors and independent safety of dams programs (programs).

"Inspector" for the purposes of this regulation means a person trained in the techniques of safety of dams inspections that is an engineer or under the direct supervision of an engineer.

A person may be certified as an inspector by submission of an application to the State Engineer accompanied by a $50.00 filing fee and meeting the following minimum requirements:

Registration by the Nevada Professional Engineers and Land Surveyor's State Board as an engineering intern or professional engineer pursuant to NRS § 625 and;

Completion of an approved course schedule of safety of dams training.

An owner may have his program certified by submission of an application to the State Engineer accompanied by a $50.00 filing fee and meeting the following requirements:

An engineer on staff or under contract at all times and;

At least one certified inspector on staff or under contract at all times and;

Demonstration of compliance with all parts of these regulations and;

Demonstration of financial ability to properly maintain all dams under the program.

The State Engineer will maintain a list of certified inspectors and programs.

Certification as an inspector or of a program expires on December 31 of the second year after issue and may be renewed.

Submitting a renewal application to the State Engineer accompanied by a $20.00 renewal fee within thirty (30) days before expiration may renew certification.

Certification application and renewal forms will be provided by the State Engineer.

Special conditions. Special conditions at dams will be handled on an individual basis. The State Engineer on their individual merits and at his discretion may consider variances from the regulations.

Electronic submittals. Applications, supporting documents, PCW and other correspondence may be electronically submitted on a portable media or via e-mail for illustrative purposes only. Until an electronic submittal policy is adopted, all official filing of documents or correspondence must be by hard copy (on paper), physically delivered to the State Engineer's office.