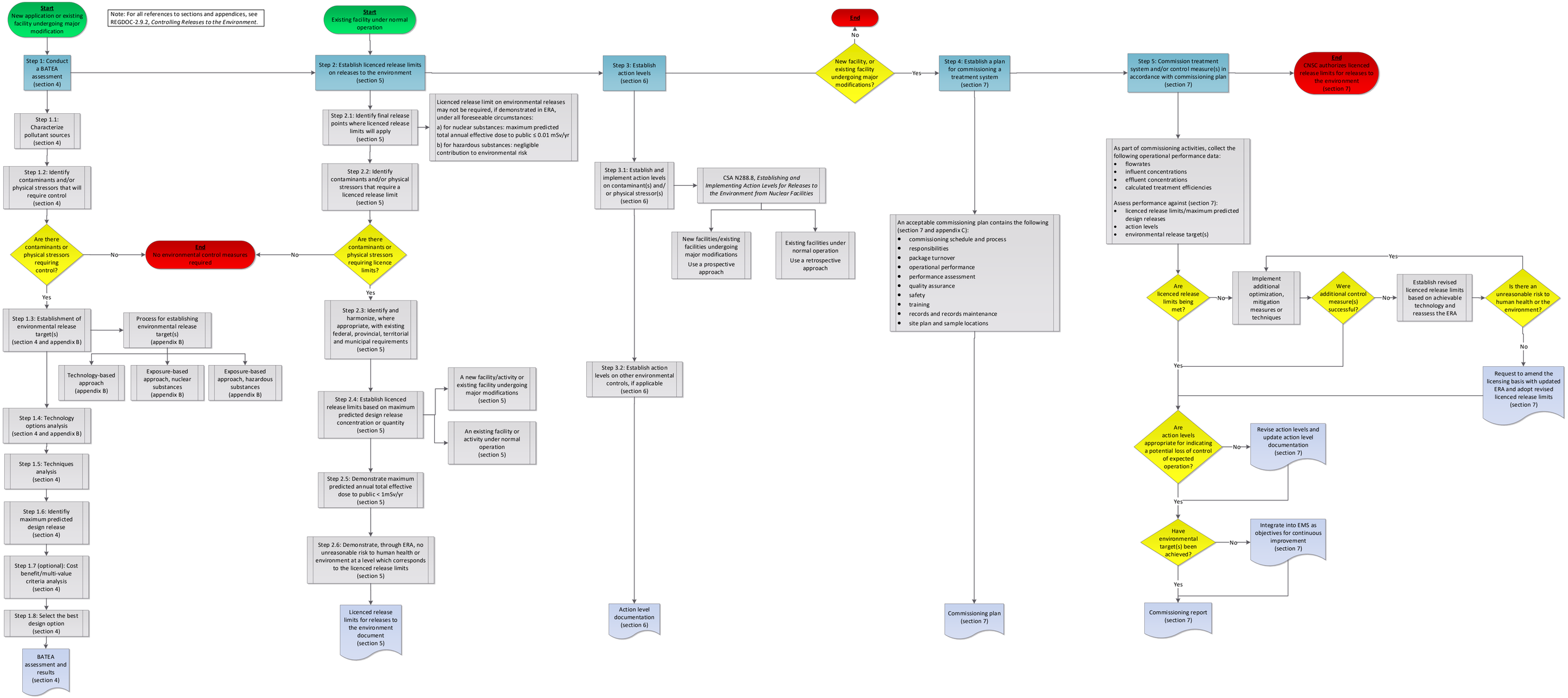
Start
New application or existing facility undergoing major modification
Note: For all references to sections and appendices, see REGDOC-2.9.2, *Controlling Releases to the Environment*.
Step 1: Conduct a BATEA assessment (section 4)
Step 1.1: Characterize pollutant sources (section 4)
Step 1.2: Identify contaminants and/or physical stressors that will require control (section 4)
Are there contaminants or physical stressors requiring control?
No
End
No environmental control measures required
Yes
Step 1.3: Establishment of environmental release target(s) (section 4 and appendix B)
Process for establishing environmental release target(s) (appendix B)
Technology-based approach (appendix B)
Exposure-based approach, nuclear substances (appendix B)
Exposure-based approach, hazardous substances (appendix B)
Step 1.4: Technology options analysis (section 4 and appendix B)
Step 1.5: Techniques analysis (section 4)
Step 1.6: Identifiy maximum predicted design release (section 4)
Step 1.7 (optional): Cost benefit/multi-value criteria analysis (section 4)
Step 1.8: Select the best design option (section 4)
BATEA assessment and results (section 4)
Start
Existing facility under normal operation
Step 2: Establish licenced release limits on releases to the environment (section 5)
Step 2.1: Identify final release points where licenced release limits will apply (section 5)
Licenced release limit on environmental releases may not be required, if demonstrated in ERA, under all foreseeable circumstances:
a) for nuclear substances: maximum predicted total annual effective dose to public ≤ 0.01 mSv/yr
b) for hazardous substances: negligible contribution to environmental risk
Step 2.2: Identify contaminants and/or physical stressors that require a licenced release limit (section 5)
Are there contaminants or physical stressors requiring licence limits?
No
Yes
Step 2.3: Identify and harmonize, where appropriate, with existing federal, provincial, territorial and municipal requirements (section 5)
Step 2.4: Establish licenced release limits based on maximum predicted design release concentration or quantity (section 5)
A new facility/activity or existing facility undergoing major modifications (section 5)
An existing facility or activity under normal operation (section 5)
Step 2.5: Demonstrate maximum predicted annual total effective dose to public < 1mSv/yr (section 5)
Step 2.6: Demonstrate, through ERA, no unreasonable risk to human health or environment at a level which corresponds to the licenced release limits (section 5)
Licenced release limits for releases to the environment document (section 5)
Step 3: Establish action levels (section 6)
Step 3.1: Establish and implement action levels on contaminant(s) and/ or physical stressor(s) (section 6)
CSA N288.8, *Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities*
New facilities/existing facilities undergoing major modifications
Use a prospective approach
Existing facilities under normal operation
Use a retrospective approach
Step 3.2: Establish action levels on other environmental controls, if applicable (section 6)
Action level documentation (section 6)
New facility, or existing facility undergoing major modifications?
No
End
Yes
Step 4: Establish a plan for commissioning a treatment system (section 7)
An acceptable commissioning plan contains the following (section 7 and appendix C):
• commissioning schedule and process
• responsibilities
• package turnover
• operational performance
• performance assessment
• quality assurance
• safety
• training
• records and records maintenance
• site plan and sample locations
Commissioning plan (section 7)
Step 5: Commission treatment system and/or control measure(s) in accordance with commissioning plan (section 7)
End
CNSC authorizes licenced release limits for releases to the environment (section 7)
As part of commissioning activities, collect the following operational performance data:
• flowrates
• influent concentrations
• effluent concentrations
• calculated treatment efficiencies
Assess performance against (section 7):
• licenced release limits/maximum predicted design releases
• action levels
• environmental release target(s)
Are licenced release limits being met?
No
Implement additional optimization, mitigation measures or techniques
Were additional control measure(s) successful?
No
Establish revised licenced release limits based on achievable technology and reassess the ERA
Is there an unreasonable risk to human health or the environment?
Yes
No
Request to amend the licensing basis with updated ERA and adopt revised licenced release limits (section 7)
Yes
Are action levels appropriate for indicating a potential loss of control of expected operation?
No
Revise action levels and update action level documentation (section 7)
Yes
Have environmental target(s) been achieved?
No
Integrate into EMS as objectives for continuous improvement (section 7)
Yes
Commissioning report (section 7)