APPENDIX G

EXAMPLES OF POTENTIAL ENTRIES AND DESCRIPTIVE FOOTNOTES TO SUPPORT TABLE B-1 OF APPENDIX B.

RELIABILITY

SUMMARY ASSESSMENT

- HIGH -- normal maintenance
- GOOD -- Maintenance with traffic maintained
- ABOVE AVERAGE -- Downtime for repairs
- BELOW AVERAGE -- Frequent outages for repairs
- POOR -- Frequent and extended outages for repairs
- UNSATISFACTORY -- Extensive rehab required
- HAZARDOUS -- Emergency action to alleviate hazards

BASIS FOR ASSESSMENT

ANALYSIS
TESTING
RECORDS
SITE INSPECTION
JUDGMENT
ENGINEERING

CURRENT BETA

VALUE (report number)
NE (not calculated)

CAUSE

IMPACT
FATIGUE - STRESS
ENVIRONMENTAL CONDITIONS
CORROSION/DETERIORATION
PREVIOUSLY UNANTICIPATED LOADS

ESTIMATED FUTURE BETA (STATE YEAR)

VALUE
NE (not calculated)

UNSATISFACTORY PERFORMANCE

MODE

SUDDEN/NO WARNING TIME
WARNING TIME

-slow, progressive (years) no remedial action possible [rehab will be required at some time]
-slow, progressive, remedial actions possible [rehab may or may not be required at some time]
-slow, progressive, remedial actions possible but short lived
-rapid with sufficient warning to rationally plan and budget
-rapid without sufficient warning time to rationally plan and follow normal budget process

IMMEDIATE CAUSE

TOWBOAT IMPACT
FLOOD/PMF
ICE IMPACT/FLOATING DEBRIS
PIPING/ FOUNDATION DETERIORATION

CONSEQUENCE

LOW UNDER ANY CONDITION (progressive loss of efficiency)
LOW UNDER SPECIFIC CONDITION (valve breaks in open position)
HIGH UNDER ANY CONDITION (loss of pool)
HIGH UNDER THE SPECIFIC CONDITION (valve breaks in closed position)

ASSESSMENT

PROBABLE ACTION

- inspect annually
- set up monitoring/measurement program
- schedule detailed studies
- study in detail now
- emergency repairs

TIME FRAME

- immediately
- 2 years
- 10 years

COSTS

- annual costs (should be fairly well known)
- first cost (ballpark)
- emergency repairs costs

BENEFITS

ENVIRONMENTAL

Examples of narrative description that might be used to support the review of current condition summarized in Table B-1 in Appendix B.

LOCKS
STRUCTURE
CONCRETE:

RELIABILITY - High - Reliability is estimated to be high based on site and annual inspection records which do not identify any problem areas. Beta was not computed and no further analysis was performed.

****alternately****

RELIABILITY

SUMMARY ASSESSMENT - POOR - The lock wall concrete was identified as the critical problem and the assessment was supported by the reliability analysis. Records show deterioration, cracking, deflection, etc. Lab testing has/has not/can/cannot, etc. be/been done.

CURRENT BETA - a beta of __ was computed and is consistent with the records on this and similar structures.

CAUSE - the low reliability/deteriorated condition is due to freeze-thaw, alkaline reactivity and erosion due to barge impacts.

FUTURE BETA - the beta is expected to /remain constant/ decrease at a constant rate of ___/decline at an increasing rate of ___ due to the barge impacts over the next ___ years.

UNSATISFACTORY PERFORMANCE

MODE - the wall could exhibit unsatisfactory performance several ways: excessive deflection, deteriorate slowly requiring patching at an increasingly frequent rate, slide slowly or rapidly without warning.

IMMEDIATE CAUSE - a number of immediate causes are possible: tow impact, ice, loss of foundation materials. The immediate cause will be directly related to the mode of unsatisfactory performance and its likely consequences.

CONSEQUENCES - The possible consequences range from need for repair during low use periods to a complete loss of locking capability for up to 6 months.

ASSESSMENT

PROBABLE ACTION - continue annual inspection program/ intensify inspections/ schedule detail testing in 10 yr program because....

ESTIMATED TIME - immediately/ 2 years/ 10 years because of the high probability and low consequences .....

COSTS - same as current O&M/ $40 K for testing using the hyperbubble model...

BENEFITS - benefits of preventing a rapid catastrophic event are approximately $xxx,xxx with xxx,xxx people at risk from..../any benefits are expected to be minimal because everyone moved out of the floodplain 20 years ago....

ENVIRONMENTAL - failure could result in ____ barrels of toxic chemicals being spilled..../environmental impacts are minimal because complete failure would only change the water surface elevation by 3" which is less than the weekly fluctuation....