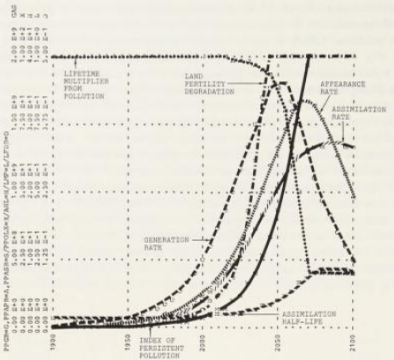

Figure 6-41 Run 6-14: behavior of the pollution sector in response to adaptive persistent pollution generation control technologies when the persistent pollution transmission delay is assumed to be 20 years

year 2020. Since no damage to life expectancies has been perceived, no pollution control technologies have been initiated. After 2020, however, the lifetime multiplier from pollution LMP begins to fall. As this effect is perceived, new pollution control technologies are developed and implemented; pollution generation PPGR thus peaks in the year 2050 and begins to decline thereafter. Because of the 20-year delay in

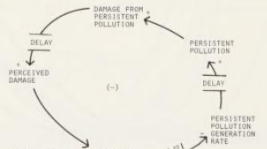

Figure 6-42 Causal-loop diagram of the structural additions designed to test the effects of adaptive persistent pollution generation control technologies

the appearance of persistent pollution, however, the persistent pollution appearance rate PPAPR does not peak until the year 2070. Even though the new pollution control technologies cause the generation of pollutants to decline rapidly after 2050, PPAPR continues to increase for 20 years thereafter, causing the index of persistent pollution PPOLX to continue growing. Persistent pollution does not begin to decrease until around the year 2085 (35 years after the decline in pollution generation), when PPAPR finally drops below PPASR.

The long delay in the response of the index of persistent pollution PPOLX to pollution control policies renders the assumed adaptive control policy ineffective. The lifetime multiplier from pollution LMP still reaches its minimum value, 0.2, during the course of the run. If new pollution control technologies are not developed until after significant damage has been observed, the long delays involved in reducing the pollution damage may allow persistent pollutants to remain above acceptable levels for several decades. In contrast to Run 6-14, an effective pollution generation control policy must anticipate those delays by reducing pollution generation well before pollution damage becomes evident (as in Run 6-13).

Run 6-15 (Figure 6-43) shows the behavior of the persistent pollution sector with the same adaptive pollution generation control policies employed in Run 6-14,

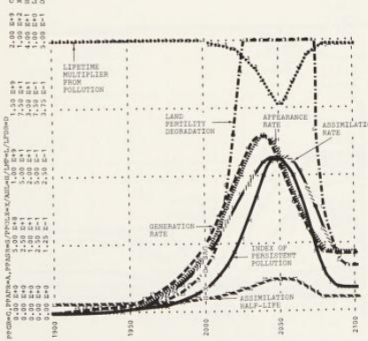

Figure 6-43 Run 6-15: behavior of the pollution sector in response to adaptive persistent pollution generation control technologies when the persistent pollution transmission delay is assumed to be 2 years