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Nuclear Plant License Renewal

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The Concerns

NRC's current license renewal process:

**Does an inadequate job of evaluating
what it looks at, and**

**Does an incomplete job by not
looking at all the places it needs to
look.**



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What NRC looks at

NRC's grants license renewal after determining the plant owner has an aging management program for components and structures important to safety.



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What NRC looks at

The aging management programs are *intended* to monitor the condition of components and structures for signs of degradation so as to cause repairs and/or replacements before safety margins are compromised.



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What NRC looks at

If aging management programs were adequate, there would not be many age-related failures.

After all, things are supposed to be identified and fixed before safety margins are compromised.

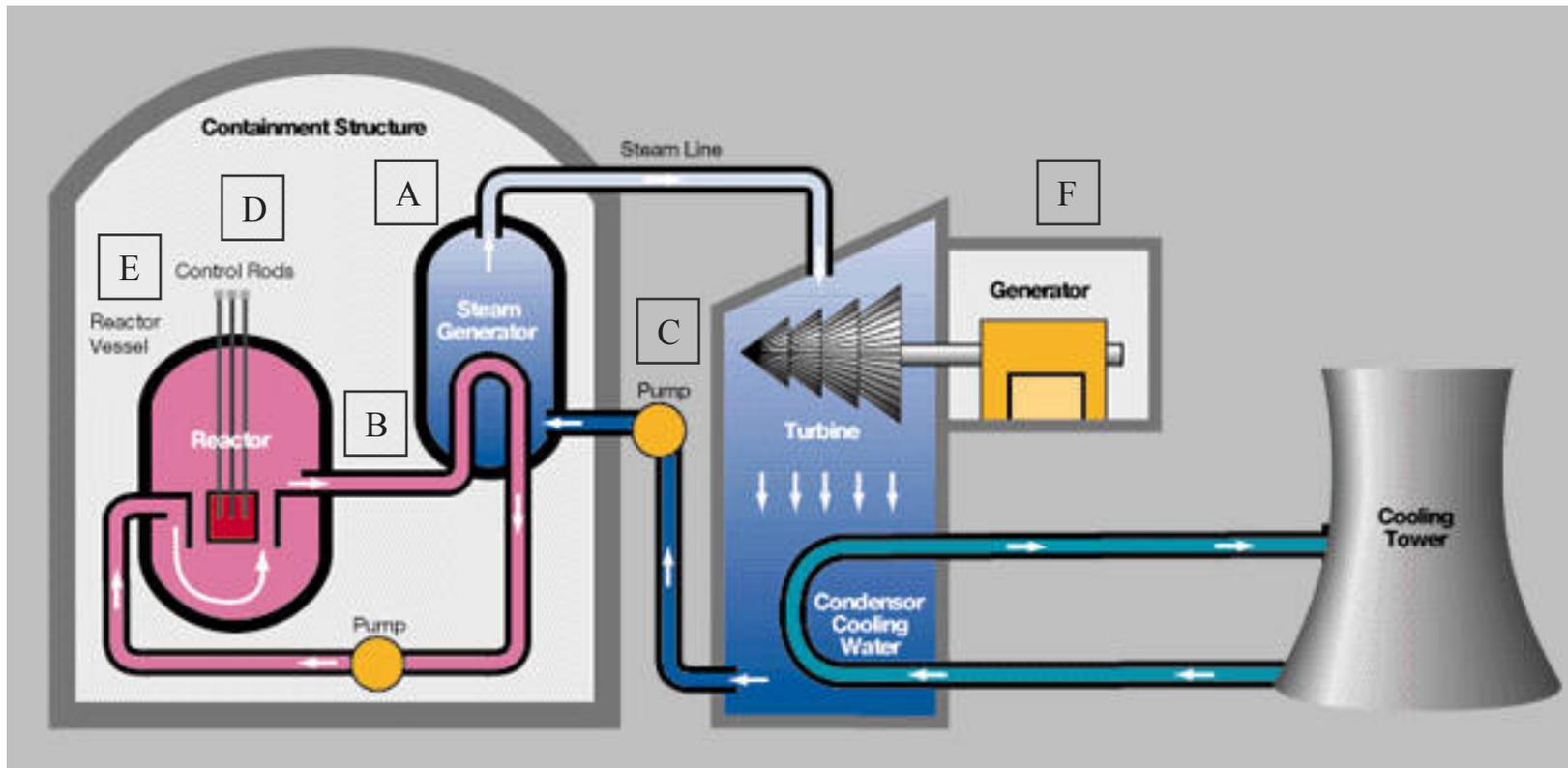
There are too many age-related failures.



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What NRC looks at



A - Indian Point

B - Summer

C - Callaway

D - Oconee

E - Davis-Besse

F - San Onofre

Very abridged listing



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What NRC looks at

Monitoring the right places with the wrong methods:

**Indian Point – steam generator tube inspected in
1997, evident damage was dismissed, tube broke in
February 2000**

**Summer – hot leg pipe weld was inspected in 1993,
evident damage was overlooked, pipe leaked in
October 2000**

**Callaway – tank lining was inspected, evident
bladder damage was missed, pumps failed**



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What NRC looks at

Monitoring the wrong places with the right methods:

Oconee – CRDM j-groove weld was inspected, but leaks occurred in another place

Davis-Besse – boric acid accumulation attributed to CRDM flange leaks, but it was also coming from CRDM nozzle leaks

San Onofre – electrical breaker inspection was deferred, it failed contributing to spring 2000 crisis in CA



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What NRC looks at

Aging management programs can only be effective by looking in the right places with the right methods. It takes two rights to make a right.

There are too many age-related failures to claim aging management programs are effective. There are no points awarded for trying.



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should also
What NRC [^] look at

Aging management programs must include multiple, diverse methods for high risk components to minimize looking in the right places with wrong methods.

Aging management programs must include some out-of-scope sampling to minimize looking in the wrong places.



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What NRC doesn't look at

The safety requirements applicable to a specific nuclear plant are a unique array of regulations from the 60s, 70s, 80s, and 90s, along with literally hundreds of exemptions and waivers from those regulations.

The NRC does not look at those requirements compared to today's safety requirements.



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What NRC doesn't look at

An option to renewing the license of Plant X for 20 years would be to build a brand new nuclear plant at the Plant X site.

The new plant would have to meet today's safety regulations. But Plant X neither has to meet today's safety regulations nor make a showing of why its applicable regulations are acceptable.



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What NRC doesn't look at

The array of safety requirements applicable to a specific nuclear plant may, and hopefully do, provide the necessary foundation for the future.

But exemptions and waivers were granted individually. Now is the time to review the cumulated impact to verify that safety levels are still adequate.



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What else NRC doesn't look at

Severe Accident Mitigating Actions (SAMAs) contradict other NRC actions.

Example: NRC “resolved” USI A-43 by revising Reg Guide 1.82 to say that new nuclear plants had to calculate containment sump blockage differently. Yet NRC relicensed Calvert Cliffs, Oconee, and other PWRs without requiring the “new” calculations or determining if the old calculations were still okay.



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What the license renewal process should verify

That “aging” regulations applicable to a reactor provide comparable protection to today’s regulations.

That aging management programs are not just in place, but also effective.



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What the license renewal process should verify

If done properly, license renewal should expose people living near a site with a reactor operating for 20 years under an extended license to no greater risk than from a brand new reactor built and operated on that site.



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Significant Events Trending Down

Significant Events

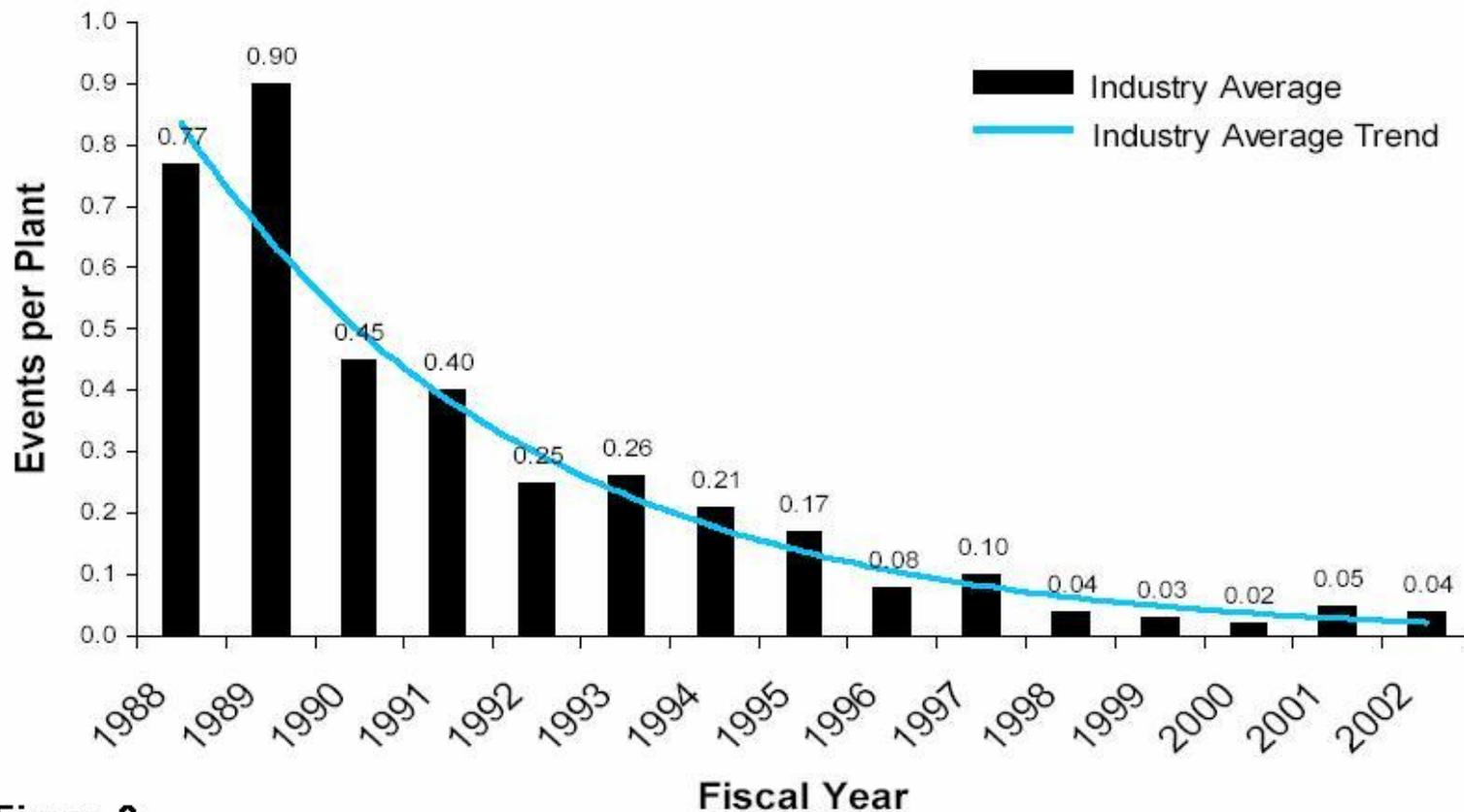


Figure 3



“Kudos” for drawing Region A’s curve

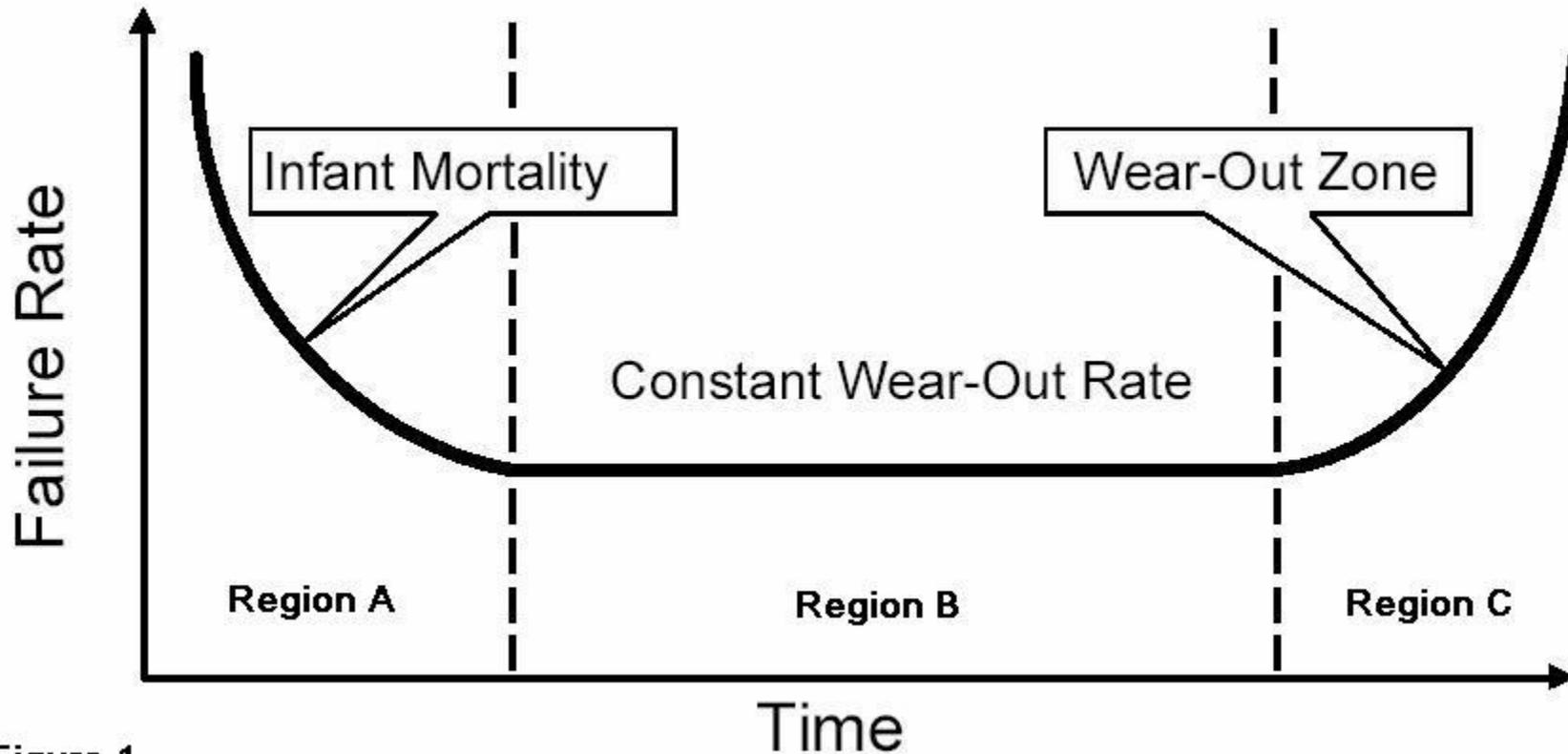
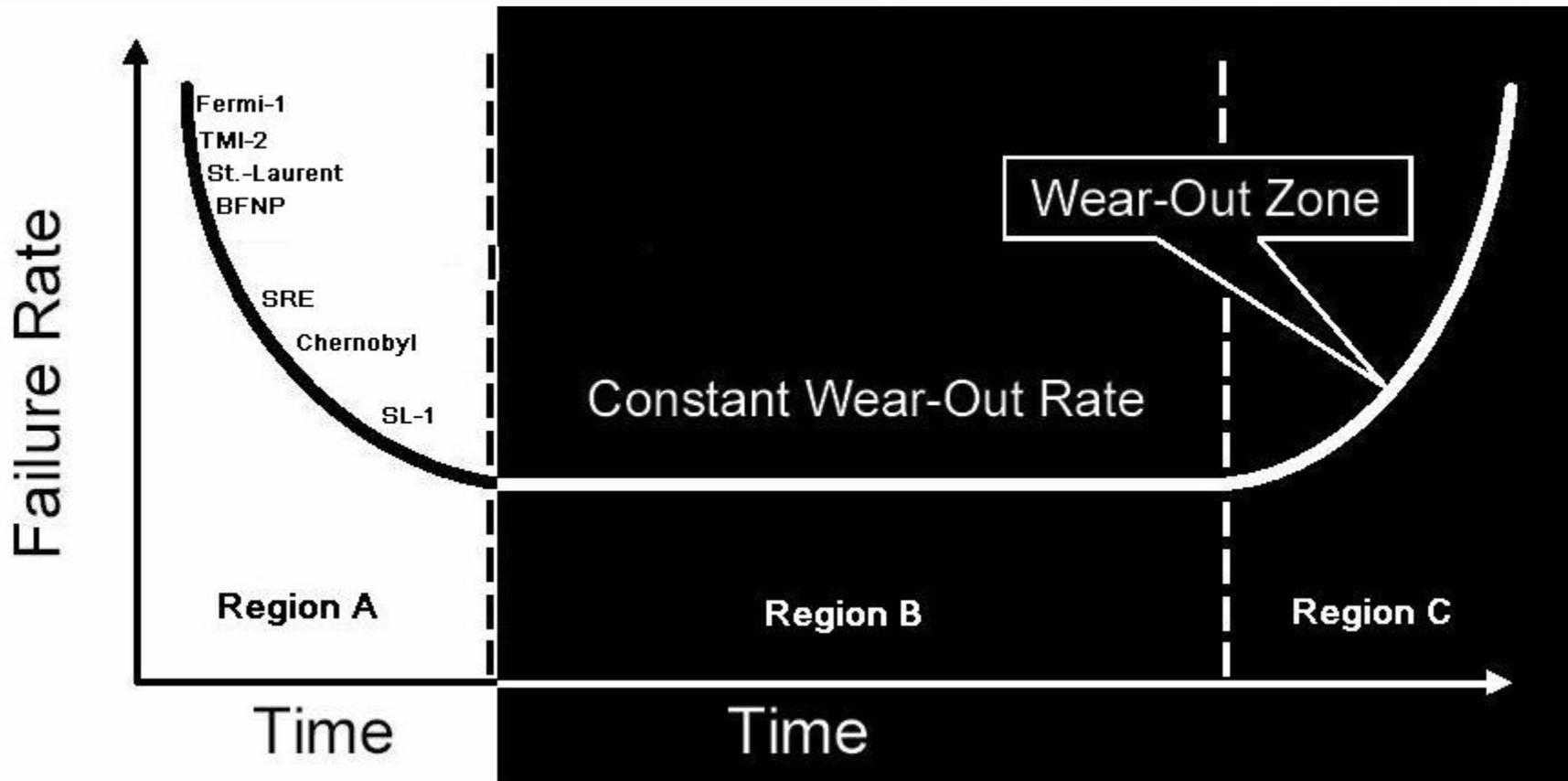


Figure 1



Remember what happened in Region A



Nuclear plants have had major accidents in their first year or two of operation (Region A).



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Why the Concerns Matter

ALL of the U.S. nuclear power reactors are heading towards – if not already in – Region C.

If NRC fails to remedy the shortfalls in its license renewal process, we will start adding names of plant disasters to the wear-out portion of the curve as we've labeled the break-in portion.



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NRC's Accident Sequence Precursor Resembles B to C



Precursor Occurrence Rate

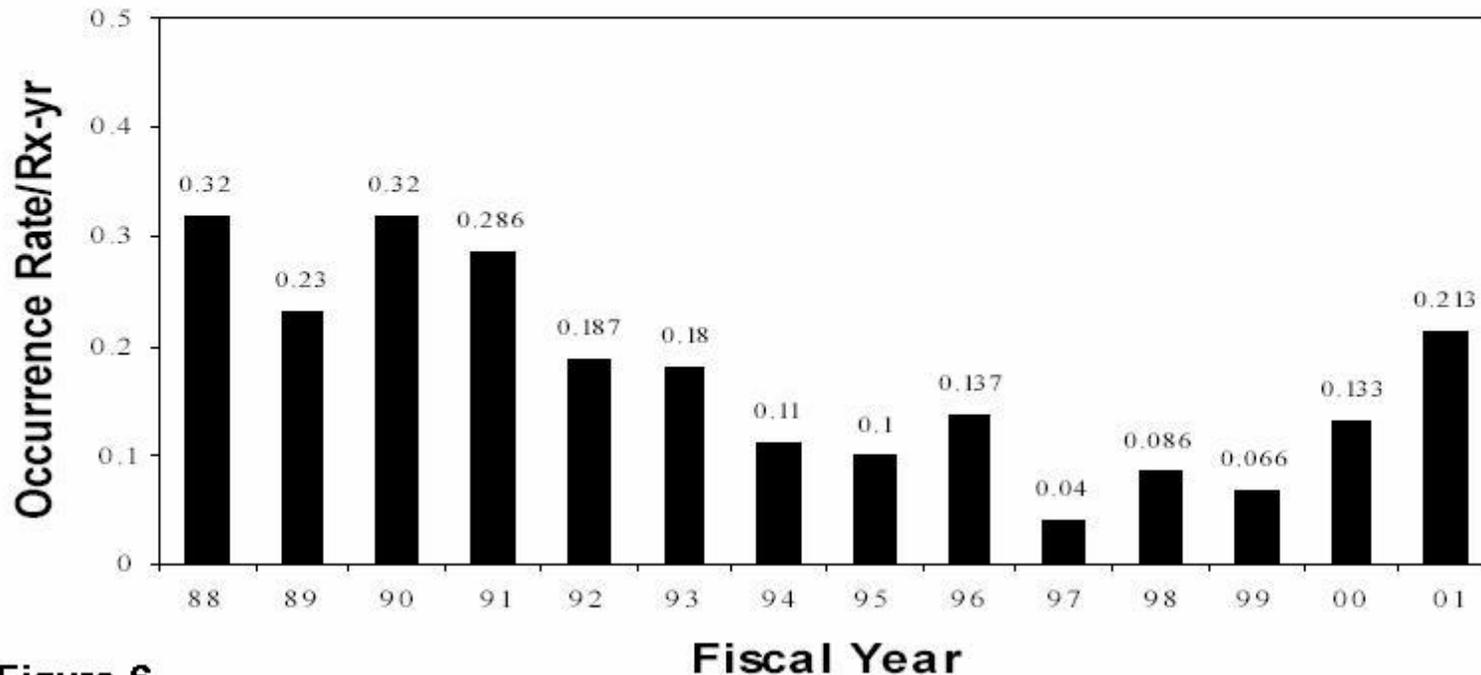


Figure 6