Idaho National Laboratory

RTC/STC/CFA

CY-2006 ALARA Summary

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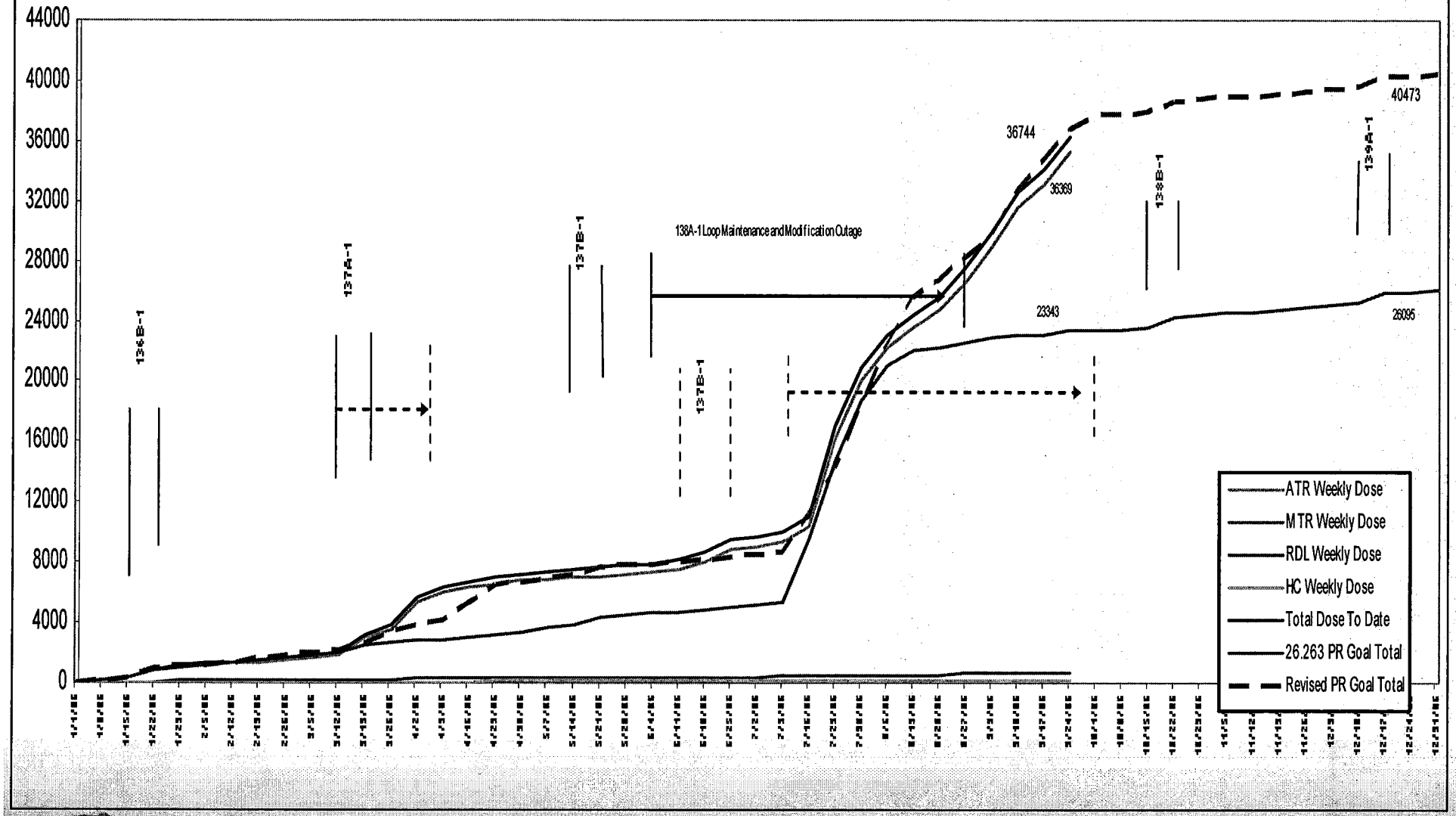
Reactor Technology Complex Cummulative Dose CY-2006 (Electronic Dosimeter Dose to 9/24/06)



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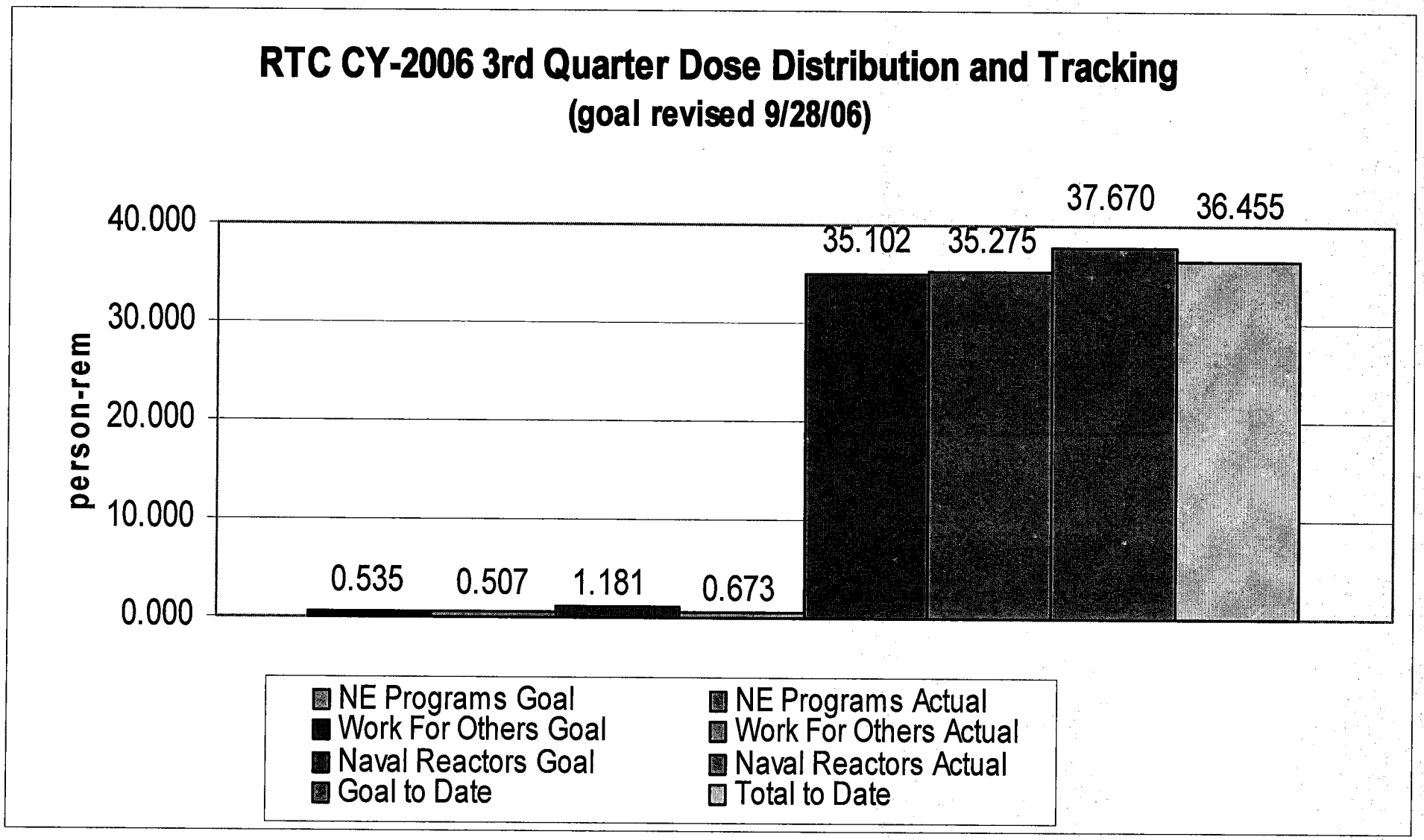

Through 9-30-06

2006 Third Quarter Performance

RTC/STC/CFA Goal Adjustment to 40.473 person-rem (9/28/06)

- *Approximate 11 person-rem adjustment in the 138A-1 outage goal as a result of unidentified work scope, unanticipated increases in radiation levels during loop decontamination, rework, and detailed planning that indicated a higher cost in dose than pre-outage estimates.*
- *Approximate 3 person-rem increase as a result of maintenance that was unaccounted for in the initial goal, extended duration, increased surveillance, and increased radiation levels for key maintenance areas during the 137A-1 outage.*
- *No changes expected for STC/CFA.*

2006 Third Quarter Performance

Two non-reportable skin contamination events

Six non-reportable clothing contaminations

Three non-reportable hot particle events involving a total of seven particles identified outside CA.

One spill due to malfunctioning equipment, one due to inadequate control of hose during draining.

Highest exposed individuals

- *1242 mrem (Westinghouse RSC worker supporting ATR)*
- *625 mrem (BEA RCT supporting ATR)*
- *114 mrem neutron (PINS Project)*

Lessons Learned

Loop Decontamination

- *Set action levels to evaluate the process.*
  - *Ion exchanger high radiation levels (400 R/h)*
  - *Filter housing high radiation levels (20 R/h)*
  - *Operational area radiation levels vs. time (90 mrem/shift)*
- *Have shielding available before start of work.*
- *Have resin reload available for more frequent discharge and recharge – based on radioactivity loading vs. spent media.*
- *Include core section of loop in calculations and discuss more openly with vendor the characteristics of each loop.*

Lessons Learned

Loop Decontamination

- *Use cartridge filters instead of bag filters for more controlled filter changes.*
- *Design a filter change apparatus to minimize the number of disposal containers, while providing adequate shielding during filter change operations.*
- *Evaluate loop piping entry points to provide a full flush of the loop and support systems, instead of just the main loop.*
- *Good decontamination factors were obtained for the first loop, marginal for the next two. (10x, 2-3x, 2-3x)*

Lessons Learned

Outage ALARA Protective Measures

- *Use of tents was very effective in controlling contamination at the source. (M-3 Hx work, loop cubicles)*
- *Purchased and deployed additional shielding (loop cubicles, loop decontamination equipment, resin cask and transfer hoses, Hx drain valves)*
- *Benefits of loop decontamination to carry through across several years of operation.*