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iTROTS
Behavior Based Safety integrated with Human Performance (ISMS-In Action)

George Wisner
Project Manager, Integrated Safety Management
Savannah River Nuclear Solutions-SRS
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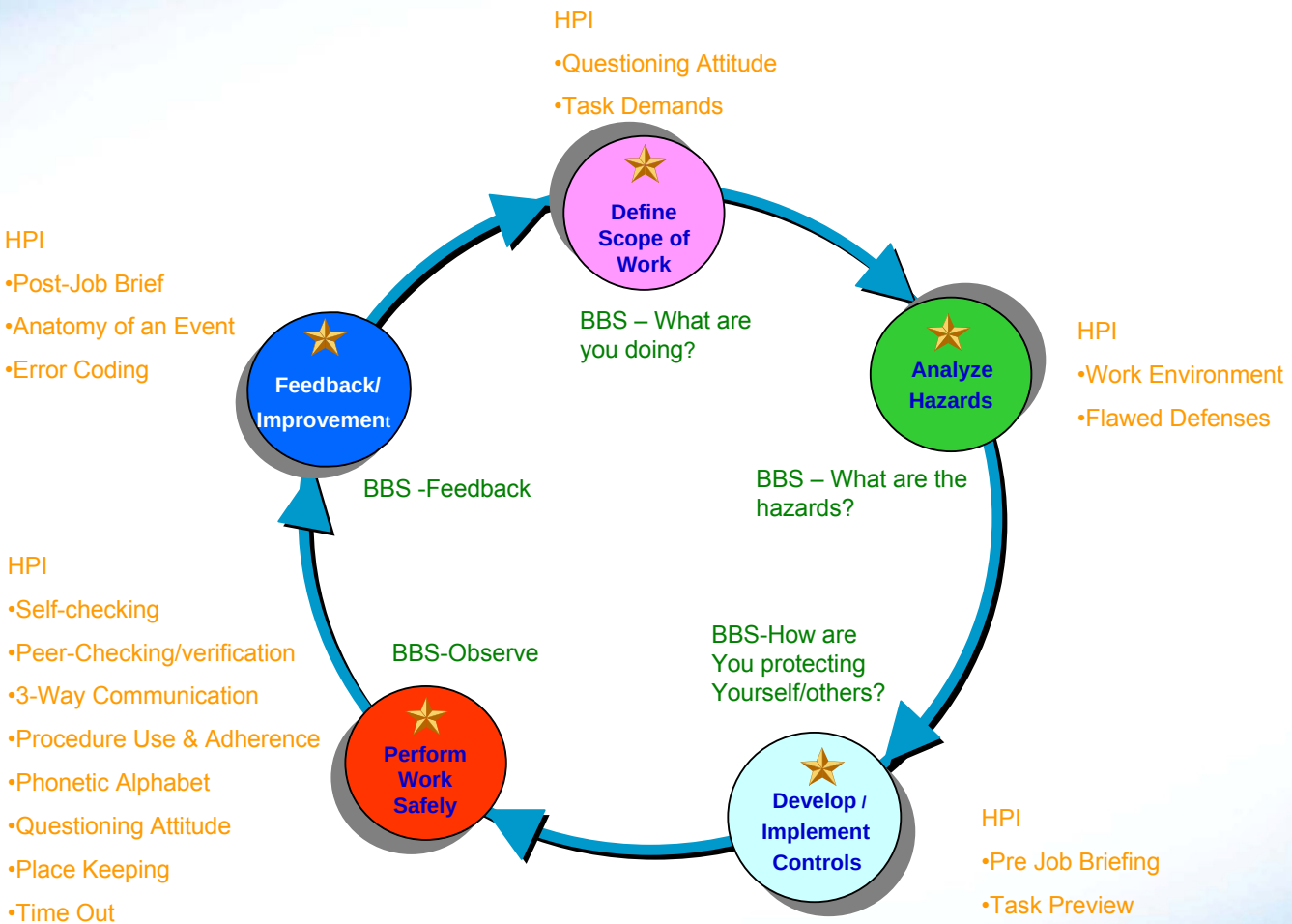
BIOGRAPHICAL SUMMARY

- **George J. Wisner, II** earned a Bachelor of Science Degree in Mechanical Engineering from Michigan State University in 1981. Mr. Wisner is currently Project Manager-Integrated Safety Management with Savannah River Nuclear Solutions (SRNS) and has 29 years experience at the Savannah River Site (SRS). Experiences at SRS include Project Design (small project design for utility and reactor facilities); Project Management (large project installations for site utilities); Management-Site Utilities (coal fired co-generation plants, domestic and sanitary waste treatment facilities, reactor restart utility support, budget, safety, quality assurance, training and procedures support); Management-Solid Waste Management (SWM) (Acting Manager-Safety, Health, Quality Assurance, Radiological, Training and Procedures, he was the Safety, Training & Procedures Manager for SWM prior to the acting assignment); Management-Site-wide Operations Procedures (involved in a Strategic Plan Initiative to develop a Procedure Writers Guide, streamline & reformat procedures and convert all site procedures to one Electronic Procedure System). Currently a member of the Procedure Professionals Association (PPA) and is a DOE contractor representative on their Steering Committee; Most recently assigned to Safety and Health Programs (responsible for ISM Program implementation to include Behavior Based Safety, Human Performance Improvement and the Voluntary Protection Program).
- He has led the implementation of Behavior Based Safety in multiple organizations (currently the Chairperson of the SRS Behavior Based Safety Steering Committee). Wisner also led the Human Performance Improvement implementation for the Solid Waste Management organization and recently served as an assessor on the SRS Human Performance Improvement site-wide assessment.

WHAT IS iTROTS?

- iTROTS is a BBS observation that is "staged" after an incident has occurred – an Instant Replay.
- It integrates Human Performance tools and error precursors into the review.
- It integrates the five Core Functions of ISM - putting ISM into action

ISMS Culture



iTROTS Does Not:

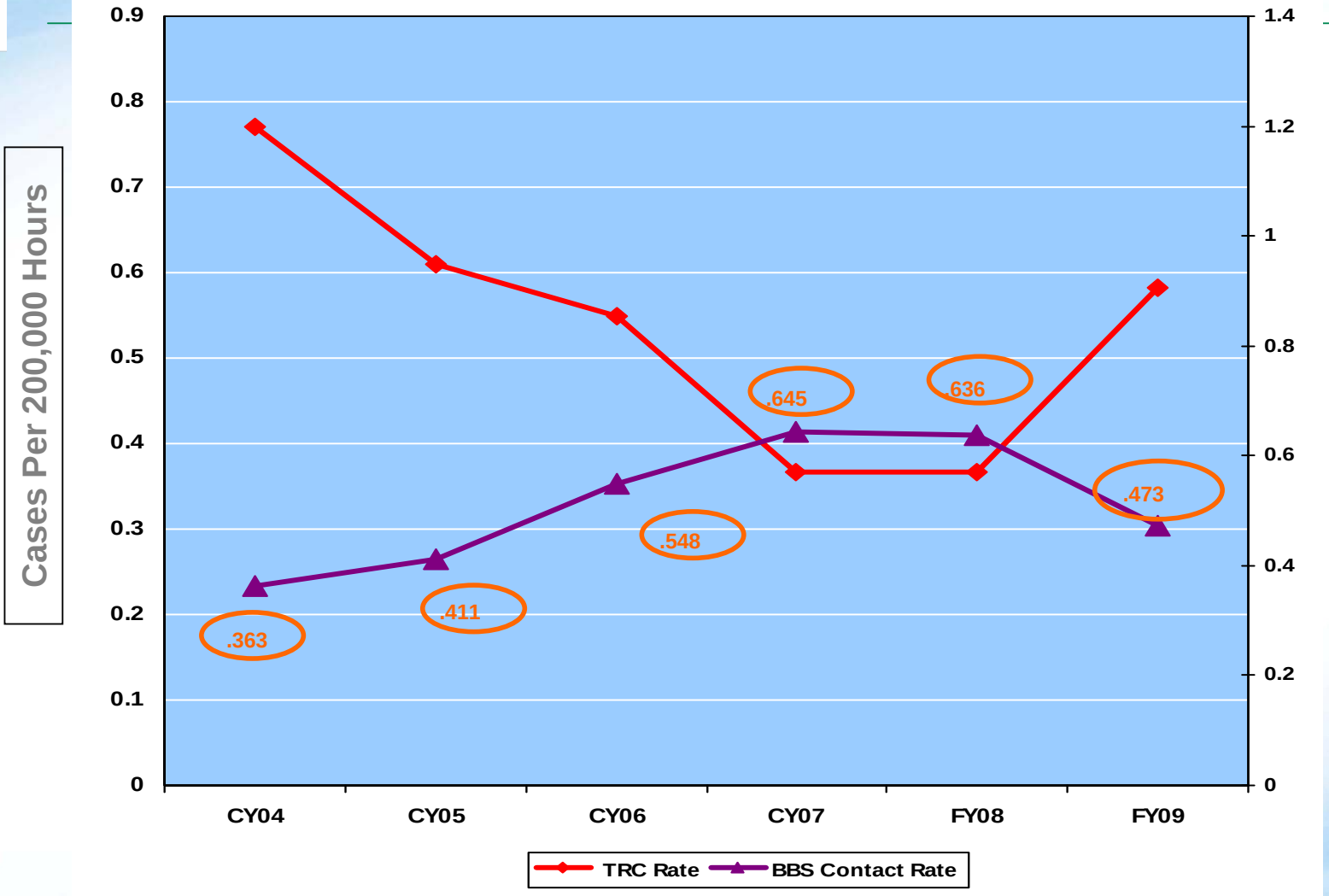
- Replace ESH&QA involvement in departmental safety concerns
- Reduce / replace management responsibility
- Address or recommend any employee discipline

WHY PERFORM AN iTROTS?

- **An iTROTS accomplishes the following:**
  - Provides a peer based analysis of the injury's causes through re-enactment of what led to the injury
  - Determines behavioral, conditional and human performance factors involved in the injury
  - Documents these behaviors in the BBS database
  - Provides recommendations for action plan development for the injury
  - Educates personnel on the nature of the injury (Lessons Learned)
  - Provides data for ABC Analysis/Action Planning (BBS) and Corrective Action Planning (HPI)

- **The iTROTS Process is owned by the LSIT**

Injuries and Observations



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WHEN TO PERFORM AN iTROTS

- All recordable injuries (MTC and DART)
- Near misses with significant potential
- First Aid Cases should be considered based on potential significance for a more severe incident
- All company/government vehicle incidents
- Upon management request

FOCUS IN AN iTROTS (ISMS in Action)

- Establish what the injured person understood the task to be (work scope)
- Discuss the hazards of the task (identify hazards)
- Identify controls that should have been in place (develop and implement controls)
- Re-enact the injury (perform work)
- The injured person helps define the cause of the injury to prevent recurrence (feedback and improvement)

Sample iTROTS Form

BBS FA/Task Observation: **Lab Worker**		**Activity:**	
UserID:	**Observation Date:**	**Observation Time:**	**Observee LSIT:**
Observation Type: STD _____ Mini-TO_____	**Location of Observation:** Area:_____Bldg:_____	**No. of People Observed:**	**Company:**

Index	Critical Behavior	Safe	At Risk
12.4	Focused on Task at Hand		
12.12	Handling Chemical Properly		
12.13	Using Flammables / Combustibles		
12.16	Work in Lab Hoods and Benches		
7.3	Misc		

HPI Tools Used

- ☐ Self Check
- ☐ Peer Check
- ☐ 3 way Comm
- ☐ Proc Use/Adherence
- ☐ Timeout
- ☐ Q Attitude
- ☐ Phonetic Alph
- ☐ Pre-Job Brief
- ☐ Place keeping

Error Precursors

Task Demands

ET01. Time pressure (in a hurry)
ET02. High workload (high memory requirements)
ET03. Simultaneous, multiple tasks
ET04. Repetitive actions/monotony
ET05. Irreversible acts
ET06. Interpretation requirements
ET07. Unclear goals, roles, or responsibilities
ET08. Lack of or unclear standards

Work Environment

EW01. Distractions/interruptions
EW02. Changes/departure from routine
EW03. Confusing displays/controls
EW04. Workarounds/out-of-service instrumentation
EW05. Hidden system response
EW06. Unexpected equipment condition
EW07. Lack of alternative indication
EW08. Personality conflict

Individual Capabilities

EI01. Unfamiliarity with task/first time
EI02. Lack of knowledge (mental model)
EI03. New technique not used before
EI04. Imprecise communication habits
EI05. Lack of proficiency/inexperience
EI06. Indistinct problem-solving skills
EI07. "Unsafe" attitude for critical tasks
EI09. Illness/fatigue

Human Nature

EH01. Stress
EH02. Habit patterns
EH03. Assumptions
EH04. Complacency/ overconfidence
EH05. Mind-set
EH06. Inaccurate risk perception
EH07. Mental shortcuts (biases)
EH08. Limited short-term memory

MTO What:	Why:	Solution:

Back

FA/Task Observation Comments (Use additional cards or paper if necessary. Staple to this card.) Place Card in Drop Box

CB#	1. What was at Risk or Sat	2. Observee Reason	3. Resolution	Scheduled Obs: Y N Follow-up Reqd? Y N Hazards or Conditional Contributor:

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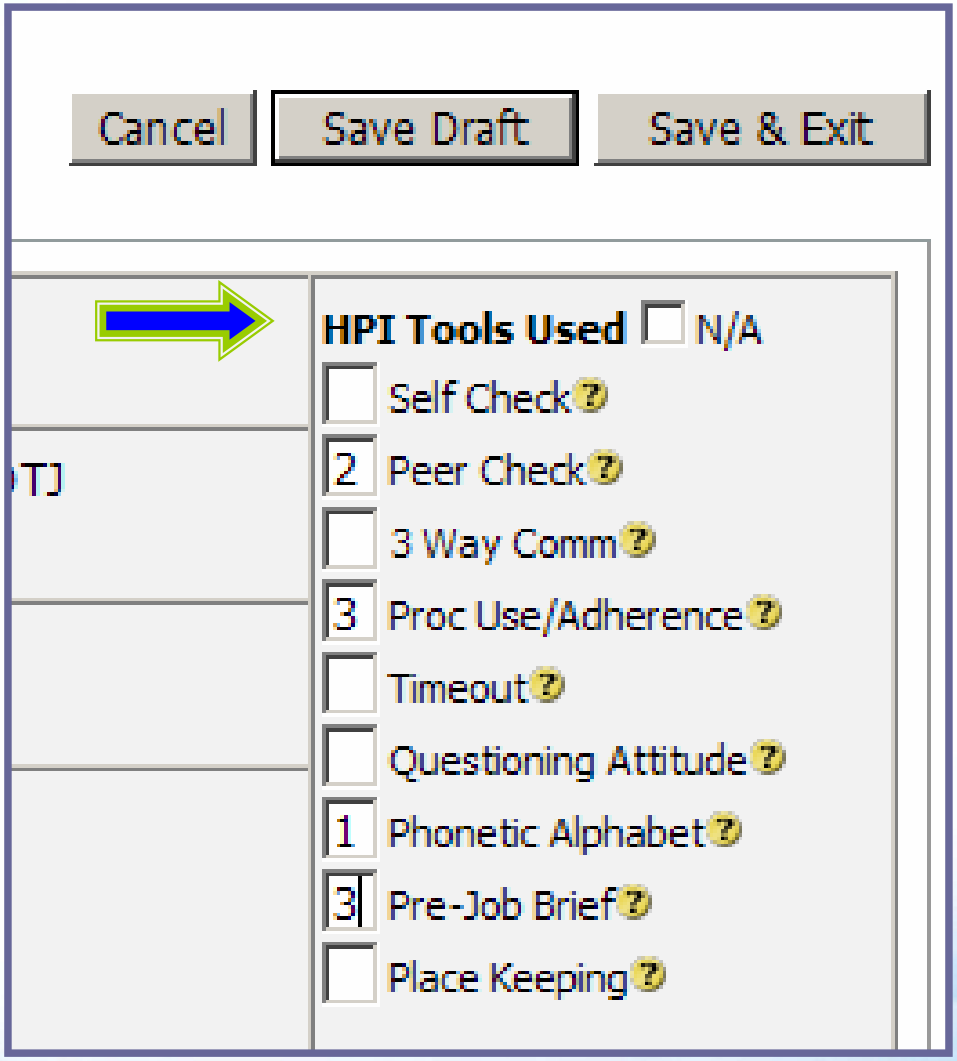
Select Error Reduction Tools

If no tools were in use Select NA. Otherwise, enter the number of People Observed for <u>each</u> tool



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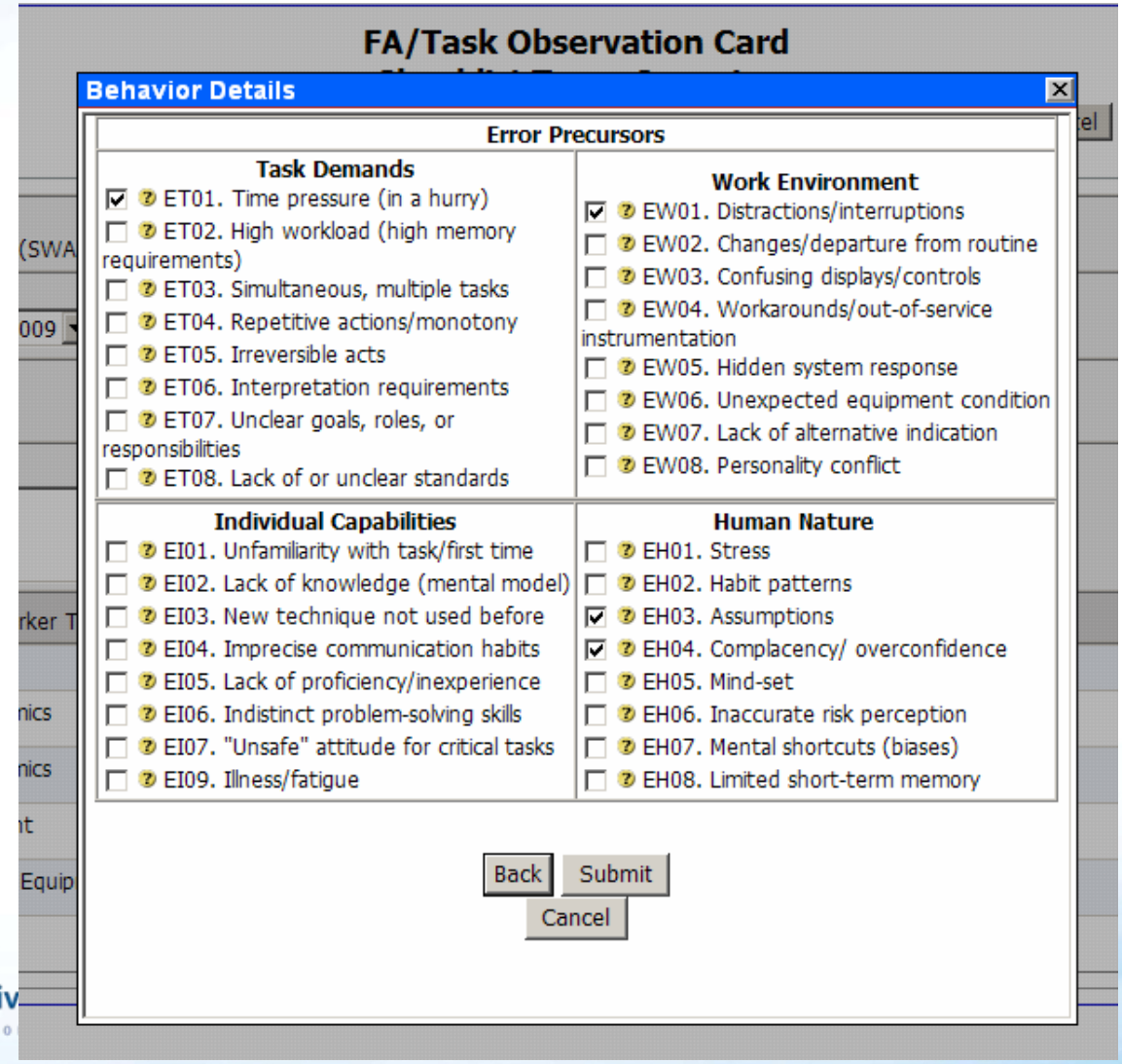
Selecting Error Precursors



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HOW TO PERFORM AN iTROTS

1. The Chair or Management Sponsor shall determine an appropriate time to conduct the iTROTS. Re-enactment should be as soon as practical after the incident to ensure details are fresh in the mind of those involved.

2. An iTROTS Team should consist of the following:
   - Chair
   - Safety Engineer / Industrial Hygienist (both if needed)
   - One Observer from a different group than that of the injured person
   - The injured person(s)

HOW TO PERFORM AN iTROTS (con't)

3. Re-enactment should begin in a timeframe that precedes the time of the incident - five minutes is often sufficient.

4. Personnel should simulate the surroundings, environment, personal effects, PPE and behaviors as closely as possible.

5. iTROTS team members should use a hard copy observation form to guide them through the process of observing the re-enactment.

HOW TO PERFORM AN iTROTS (con't)

6. Open-ended questions should be used to help the injured person recall the details of the incident, for example:
   - What was your assignment?
   - What were you doing?
   - Why did you choose to do "x"?
   - Why were you doing it that way?
   - What were you thinking about?
   - How were you feeling?
7. Pictures often add clarify to the iTROTS write-up.
8. Enter a completed observation sheet into the BBS Database.

HOW TO PERFORM AN iTROTS (con't)

9. Assign an iTROTS team member to draft the iTROTS using the BBS database iTROTS module.
10. The draft iTROTS should be reviewed by all iTROTS team members including the person(s) involved in the incident.
11. The iTROTS team should concur with the iTROTS before presenting to the LSIT.
12. If there is a need to issue the iTROTS urgently, the iTROTS team should ensure the LSIT Chair and Management Sponsor concur.

HOW TO PERFORM AN iTROTS (con't)

13. The LSIT should determine the need for an ABC analysis.
14. The iTROTS recommendations should be used to generate an action plan in the site BBS Database Action Plan module.
15. The approved iTROTS should be issued to appropriate work groups for review.

ACKNOWLEDGEMENTS

- The Associates of the SRS Site Utilities Department (1995-2005) for their development of the 'The Rest of The Story (TROTS) process.
- Roger Staten and Dex Ray for their dedication to BBS and HPI and the effort put forth by them to add the 'integrated' to integrated The Rest Of The Story (iTROTS)