
REAL-TIME PERFORMANCE MANAGEMENT FOR THE ENTERPRISE
RtPM
SAN FRANCISCO PHILADELPHIA HOUSTON FRANKFURT
OSISOFT USER CONFERENCES 2005
REAL-TIME PERFORMANCE MANAGEMENT FOR THE ENTERPRISE
RtPM

Presenter's Name

Presenter'sTitle

Subject Title

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REAL-TIME PRODUCTION

THROUGHOUT THE ENTERPRISE

Product Collaboration using ProcessPoint at Dow Reichhold Specialty Latex

Outline

- Dow Reichhold Specialty Latex
- ProcessPoint Drivers
- Project Scope
- Anticipated Benefits
- Summary

Dow Reichhold Specialty Latex

- 50/50 joint venture of The Dow Chemical Company and Reichhold, Inc. (DRSL)
- Formed in January 2002
- World's largest producer of specialty latex
- Develops customized technologies & products
- Innovation, speed and teamwork are key elements of the DRSL business model

Locations

- **Headquarters and Research & Development**
  - Research Triangle Park, NC
- **Primary Manufacturing Locations**
  - Cheswold, Delaware
  - Kensington, Georgia
- **Other Manufacturing**
  - North America , Europe
    Latin America , Asia/Pacific Region

Products

- **Polymer Types**
  - Styrene Butadiene
  - Nitriles
  - Acrylates
  - Specialty Co-Polymers

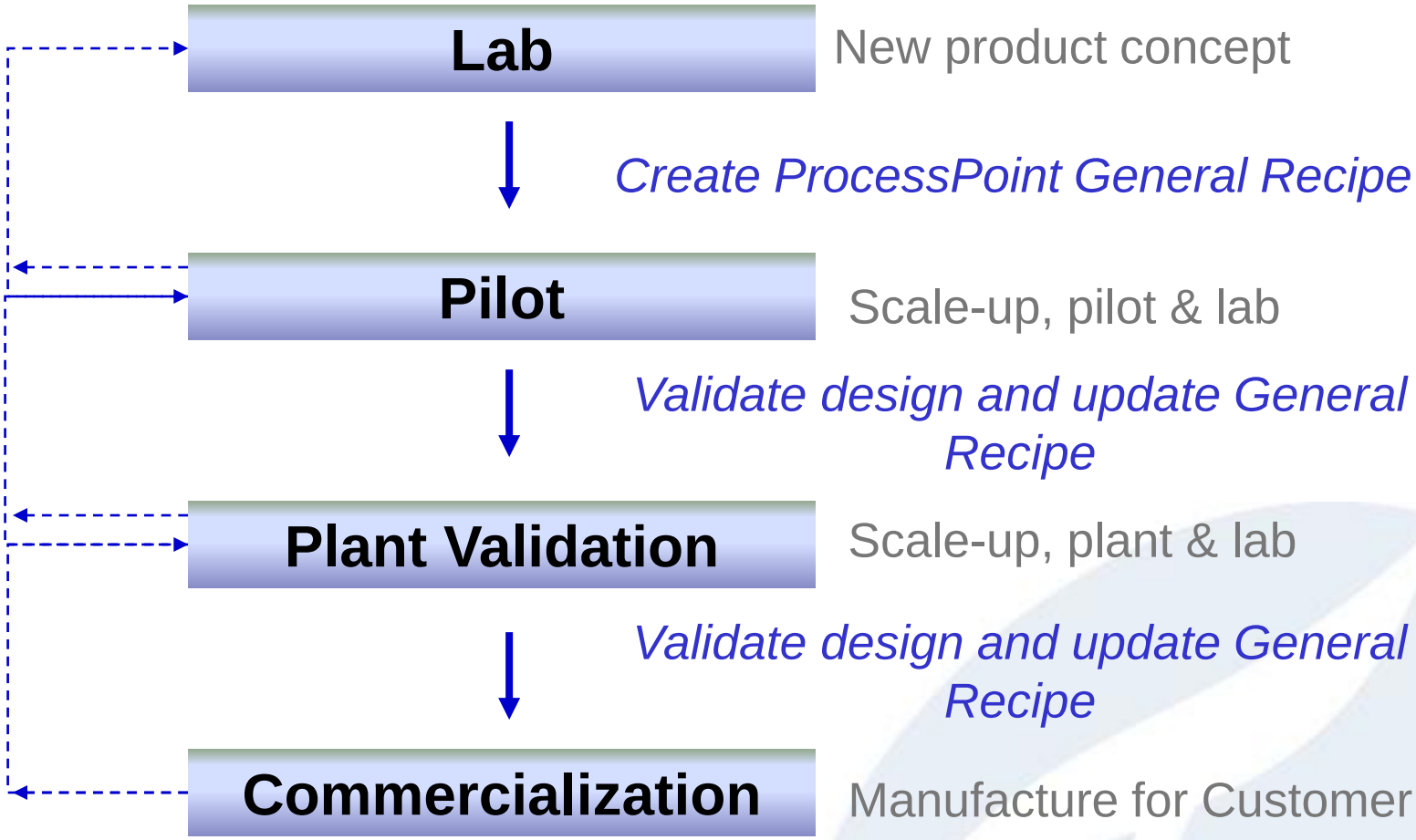
Applications

- Adhesives
- Packaging
- Construction
- Gloves
- Nonwovens and Textiles
- Performance Resins
- Specialty Paper
- Latex Modified Concrete

Drivers for ProcessPoint

- **Global R&D, Manufacturing and Sales**
- **Challenges of bringing systems together from Reichhold and Dow Chemical**
- **Recipe management in general**
  - Management of change for existing products
- **Product innovation management**
  - Speed to market for new products

Innovation Process



Project Team

- **Management Support**
  - VP of Technology – creates recipes
  - VP of Manufacturing – uses recipes
- **Core**
  - Manufacturing
  - Research & Development
  - Environmental, Health & Safety
  - Process Engineering
- **Other Team Members**
  - Finance, Purchasing, Pilot Plant

Key Requirements

- **“One version of the truth” through global database**
  - Across departments & geographical locations
- **Facilitate company-wide collaboration**
- **Flexible recipe development & management**
  - Key ingredients, activity based descriptions
- **Searchable recipe database**
  - Legacy data was in Excel, difficult to manage
- **Management of change**
  - Audit trail, Electronic approvals, Versioning
- **Security of intellectual capital**

Other Factors in Selection of ProcessPoint

- **ISA S88 General Recipe Standard**
- **Raw material management**
- **Role based views using Display Templates**
  - Internal & Customer
- **Flexibility for additional uses of software**
  - Marketing, Regulatory, Enterprise accounting
- **Positive experience with OSIsoft**
  - Using PI software at manufacturing sites

Project Scope

- **Raw Materials**
  - Properties
- **Intermediates & Products**
  - Properties
  - Formula
  - Procedures
- **Final Products**
  - Key properties
  - Packaging data

Project Scope – Raw Materials

- Each vendor raw material specification is authored, approved & versioned by Purchasing/Technology/EHS
- Latest specifications accessed in real time by Receiving Personnel to ensure C of A compliance
- R & D, Manufacturing have real-time access to the most recent approved raw material data and related documents

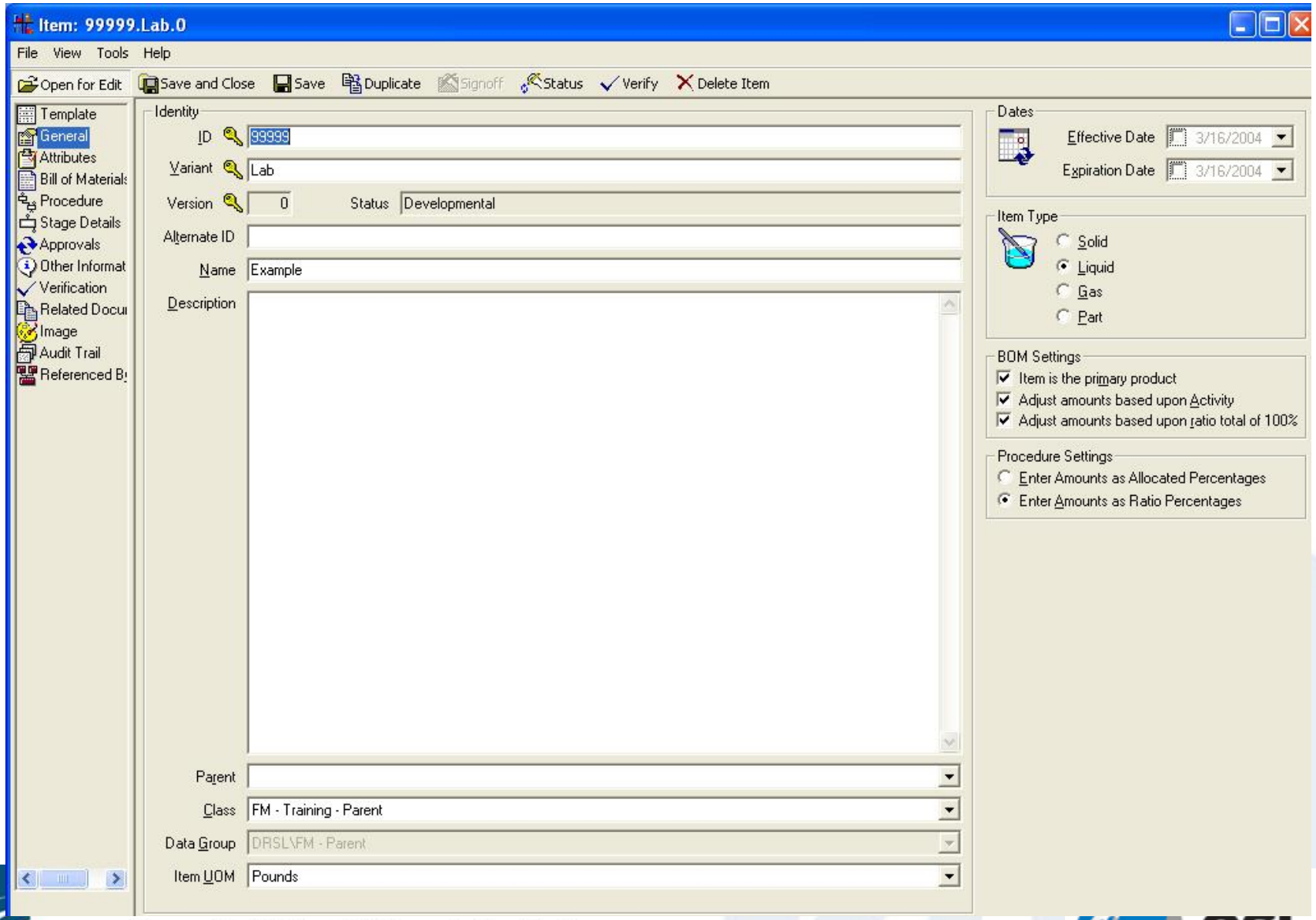
Project Scope – Intermediates & Bulk Product

- **Technology**
  - Typical properties
  - Quality specification limits
  - “Dry Parts” activity based formula
  - General recipe composition, procedure, specifications
- **E H & S**
  - Health, safety and environmental risks
  - Labeling needs
  - Regulatory compliance status
- **Manufacturing**
  - Product scale-up
  - Master Recipe

Project Scope – Packaged Product

- **Package codes**
- **Key final product properties**
- **Product display templates used by salespeople and customers**

General Tab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Example
Description
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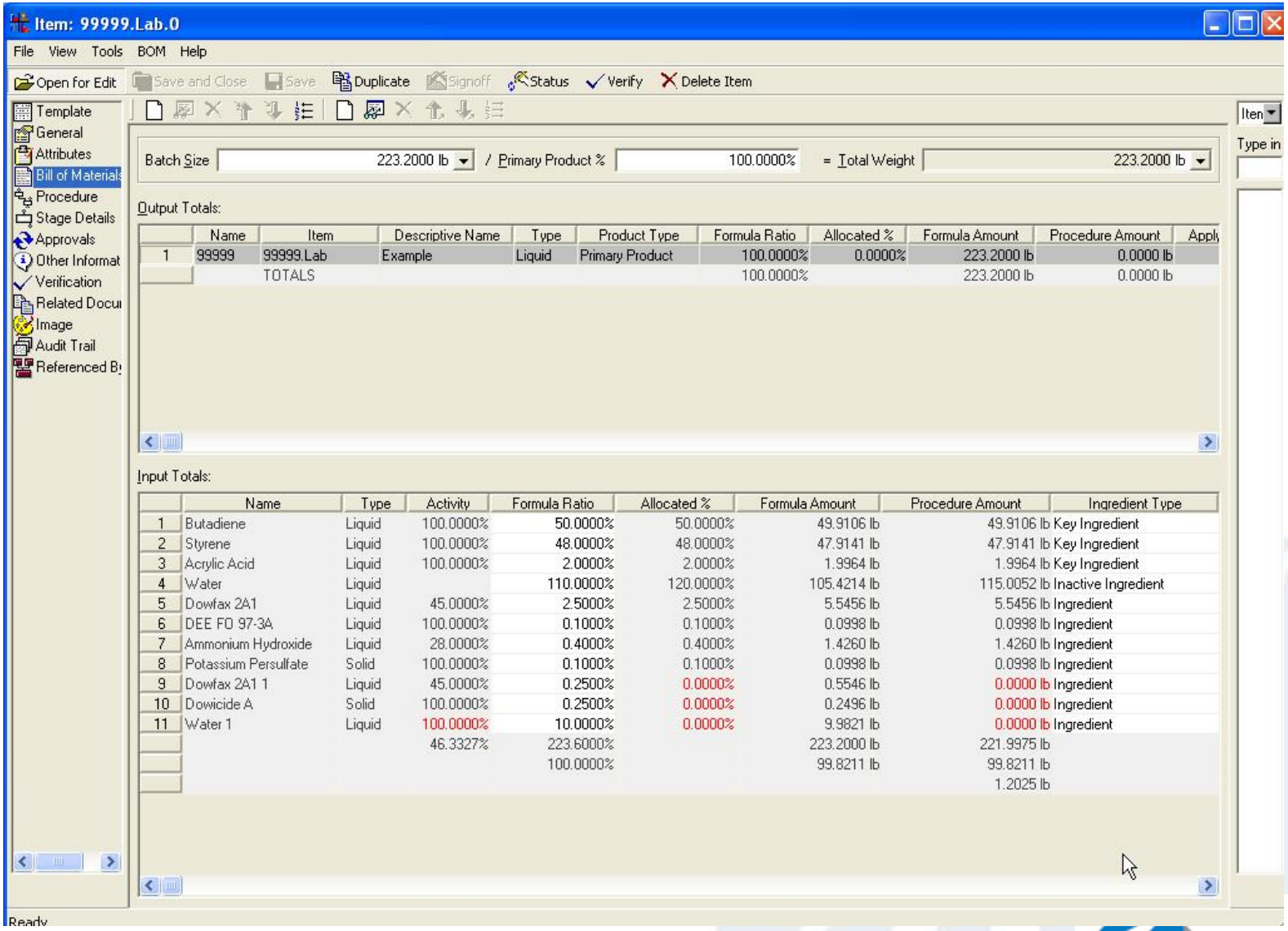
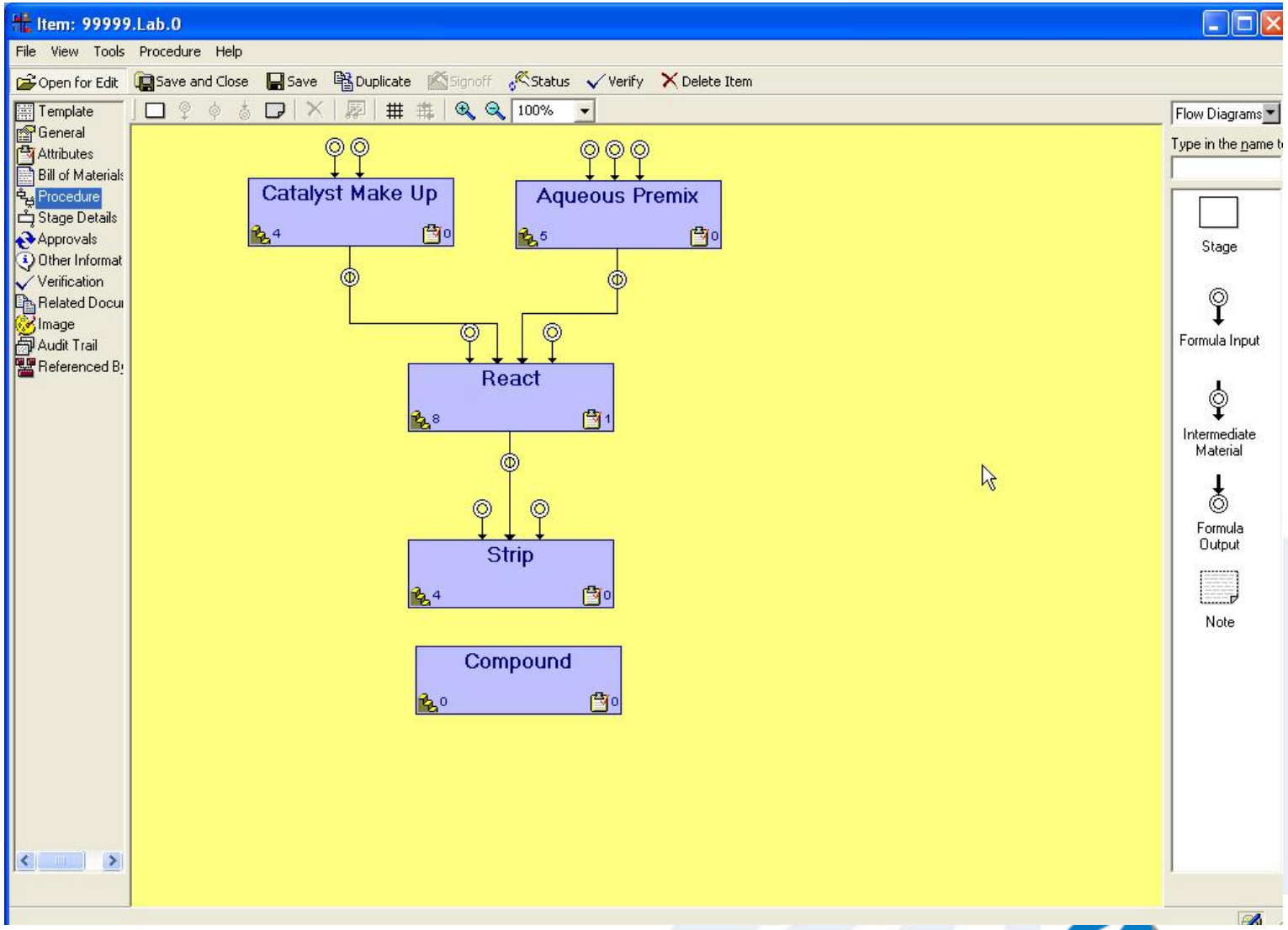
Class
FM - Training - Parent
Data Group
DRSL\FM - Parent
Item UOM
Pounds
Dates
Effective Date
3/16/2004
Expiration Date
3/16/2004
Item Type
Solid
Liquid
Gas
Part
BOM Settings
Item is the primary product
Adjust amounts based upon Activity
Adjust amounts based upon ratio total of 100%
Procedure Settings
Enter Amounts as Allocated Percentages
Enter Amounts as Ratio Percentages

Bill of Material



Procedure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Type in the name t
Catalyst Make Up
Aqueous Premix
React
Strip
Compound
Stage
Formula Input
Intermediate Material
Formula Output
Note

Procedure – Stage Details

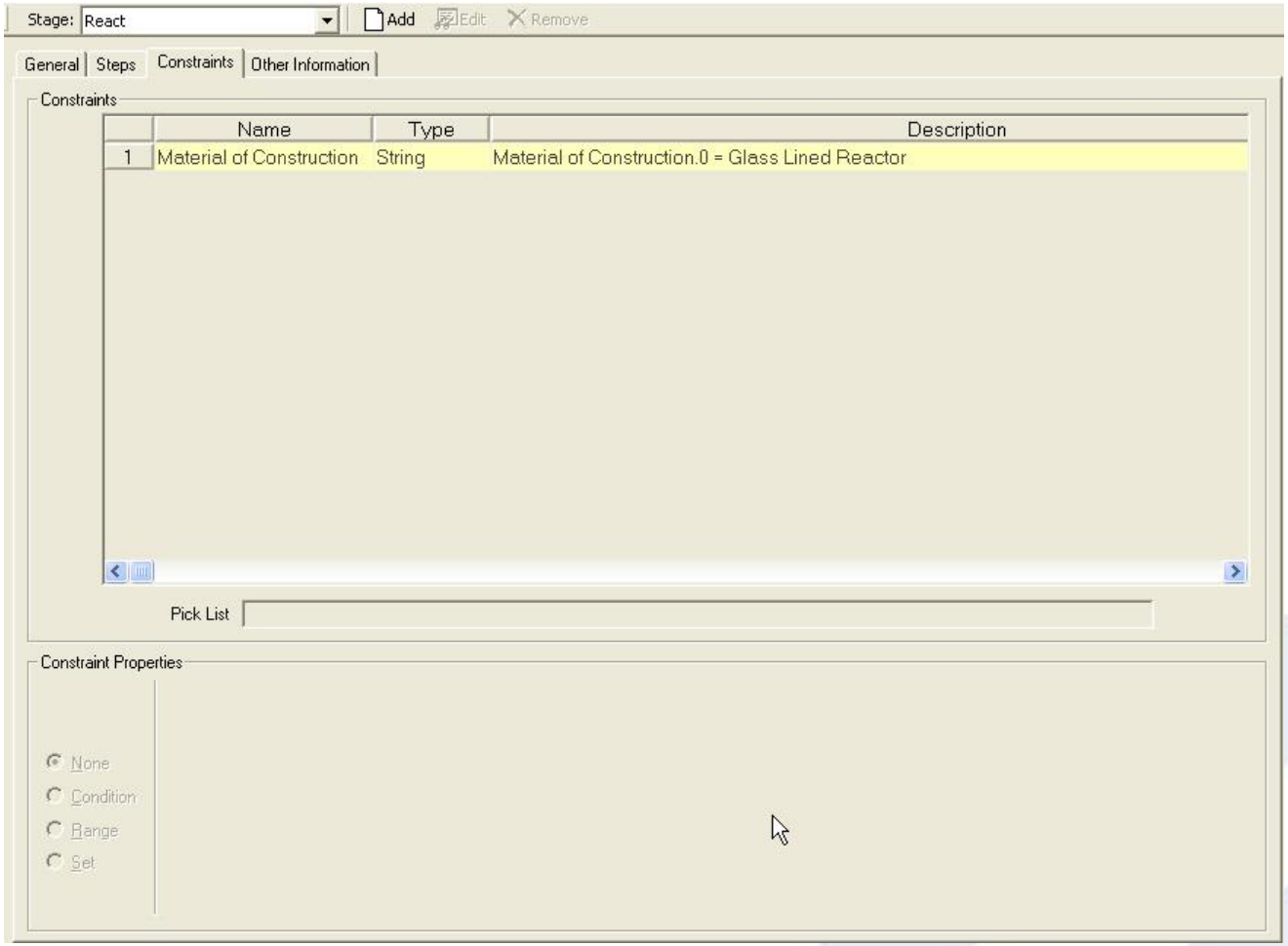
Stage: React

General | Steps | Constraints | Other Information

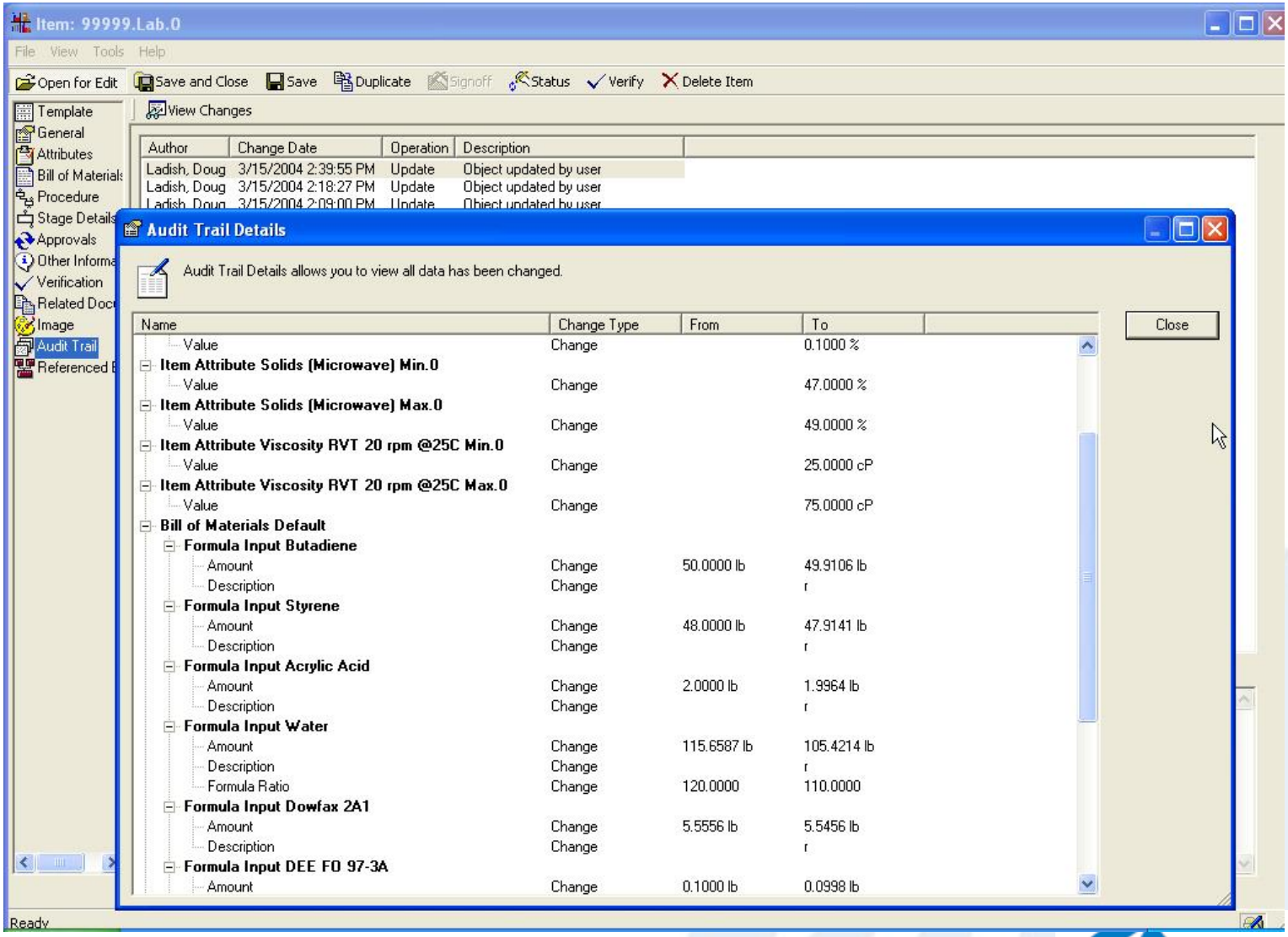
	Order	Path	Action	Formula	Material	Allocated	Value	Descr
1	⇩	0	Intermediate Input		Intermediate_Material		84.6614 lb	
2	⇩	0	Agitate				5.0000 min	
3	⇩	0	Temperature				140.0000 deg F	
4	⊤⊤	1	Feed	Styrene	Styrene.DR	48.0000%	47.9141 lb	Feed over 360 minutes
5	⊥⊥	2	Feed	Butadiene	Butadiene.DR	50.0000%	49.9106 lb	Feed over 360 minutes
6	⊥⊥	3	Intermediate Input		Intermediate_Material		38.6529 lb	Catalyst feed over 60 minutes
7	⇩	0	Temperature				180.0000 deg F	
8	⇩	0	Intermediate Output		Intermediate_Material		221.3143 lb	

Procedure – Step Parameters

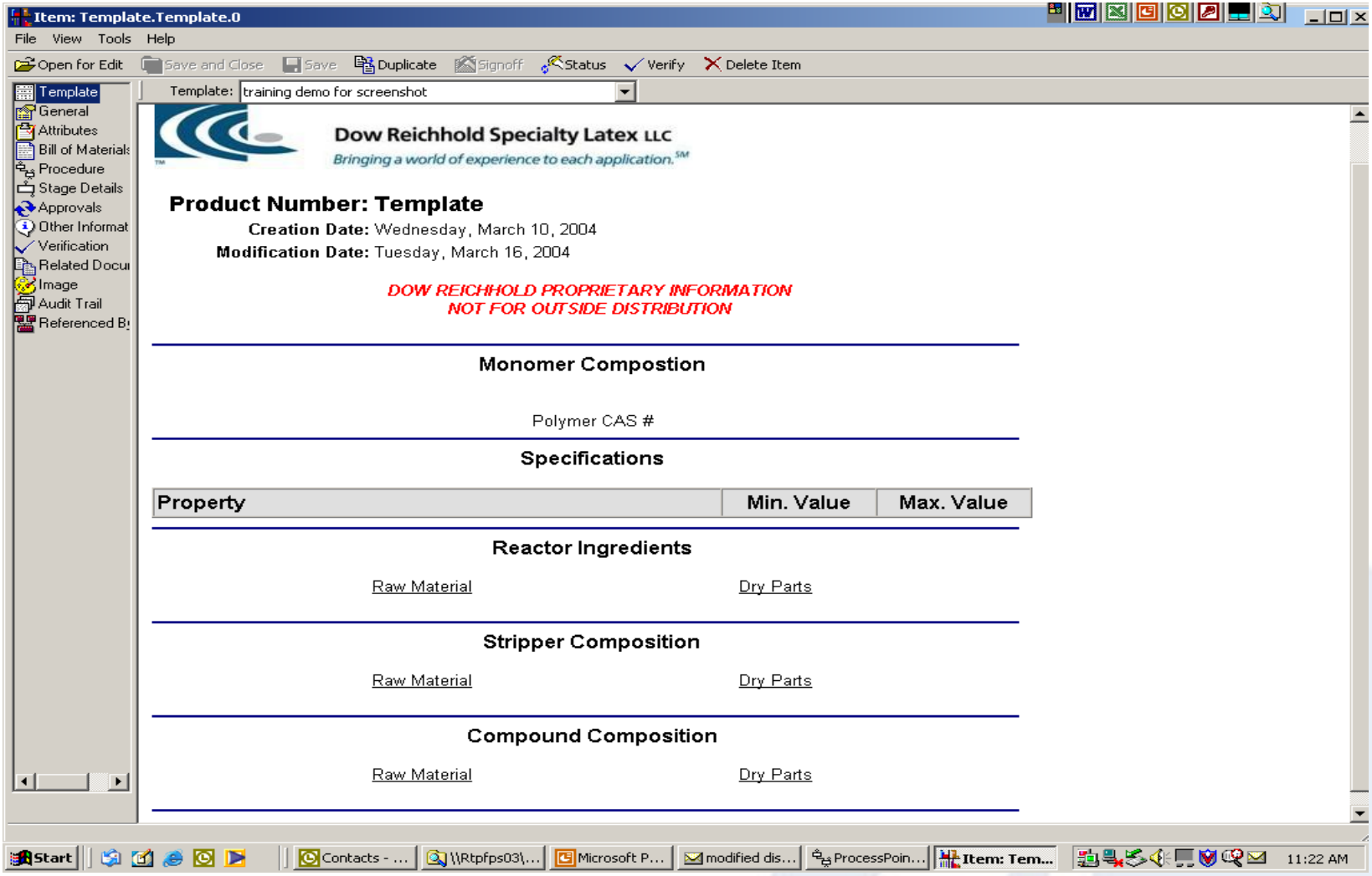
Procedure – Stage Constraints



Audit Trail with Details Shown



Sample Role-Based Display



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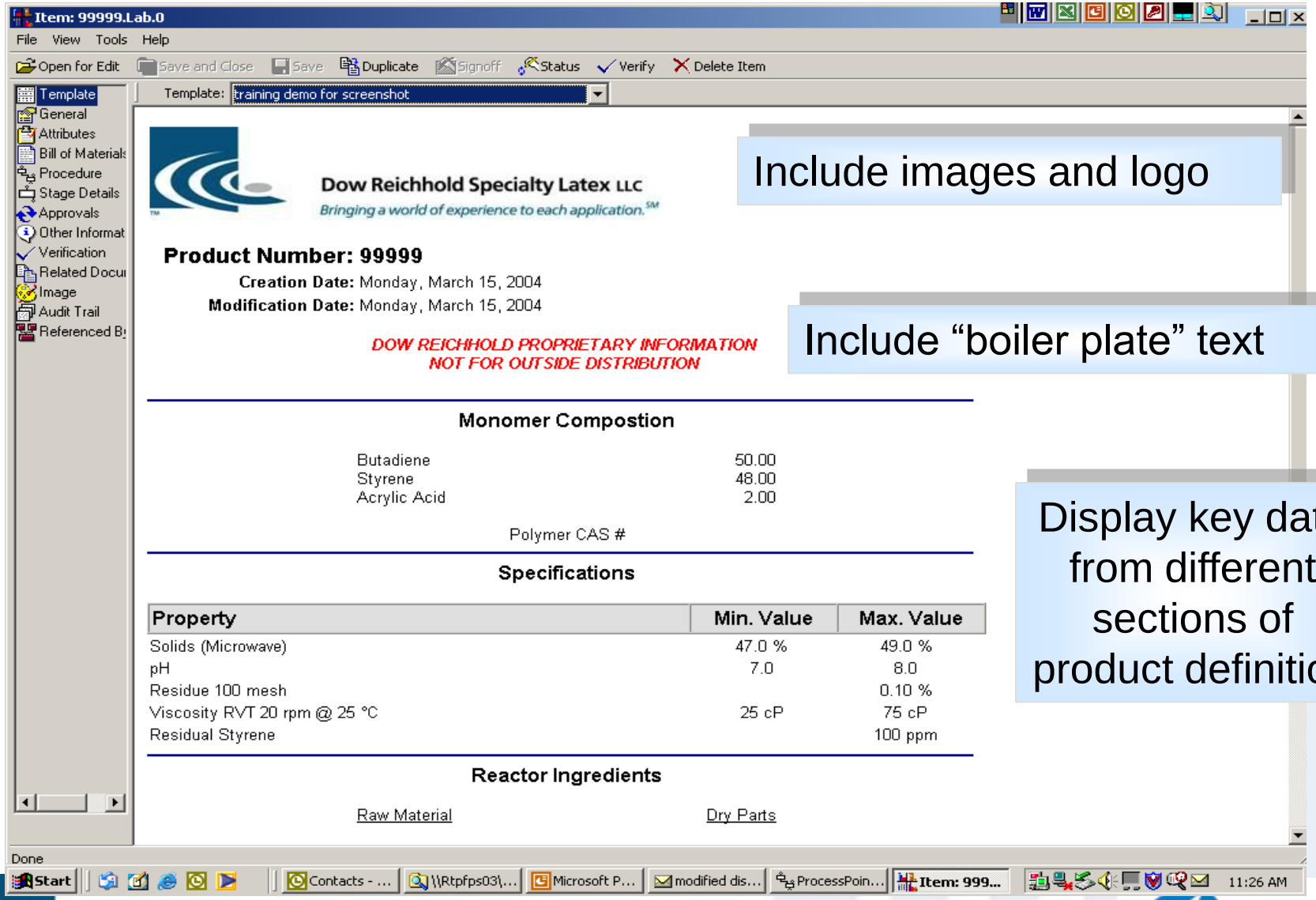
Sample Role-Based Display

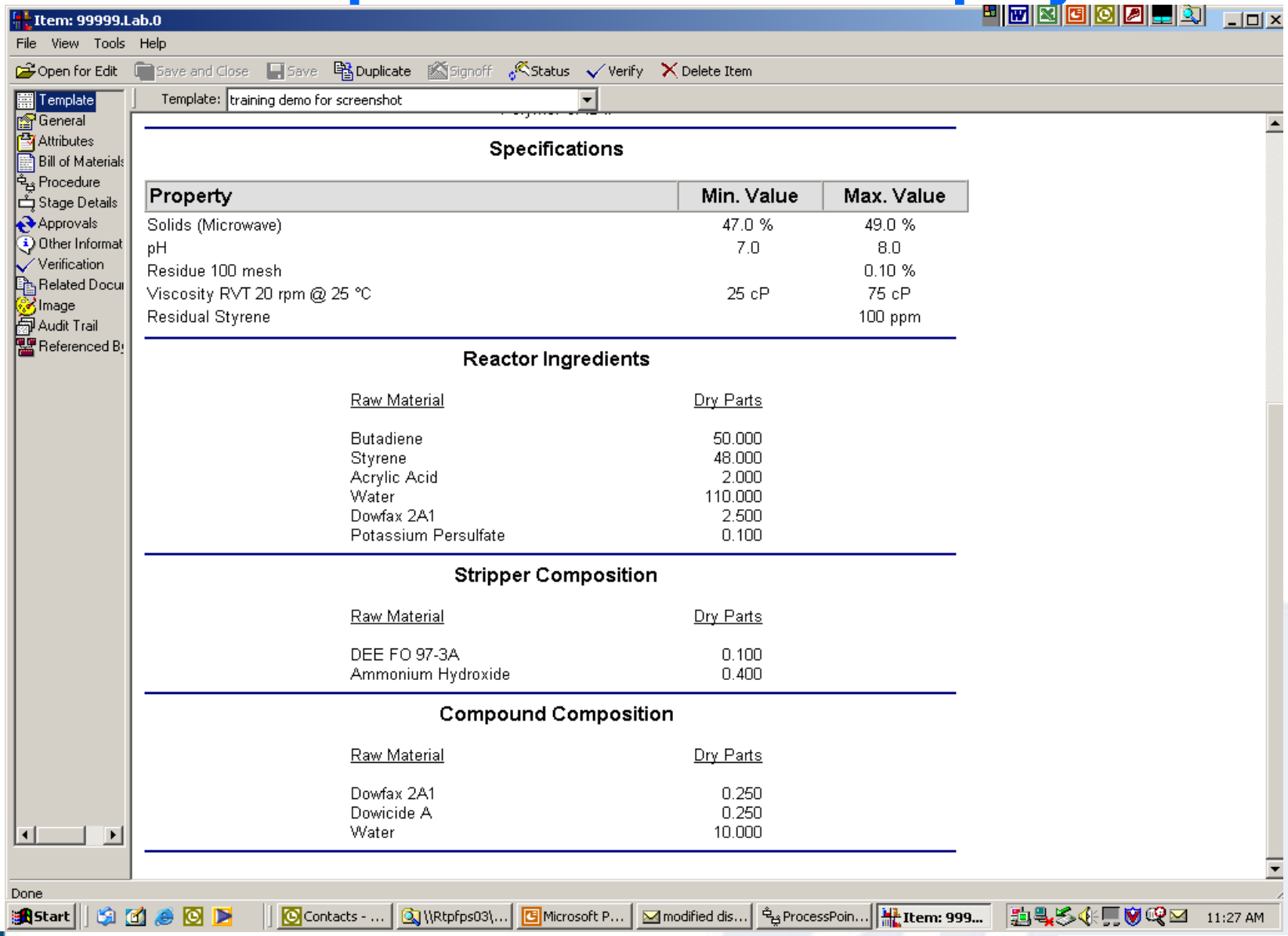


Include images and logo

Include “boiler plate” text

Display key data from different sections of product definition

Sample Role-Based Display



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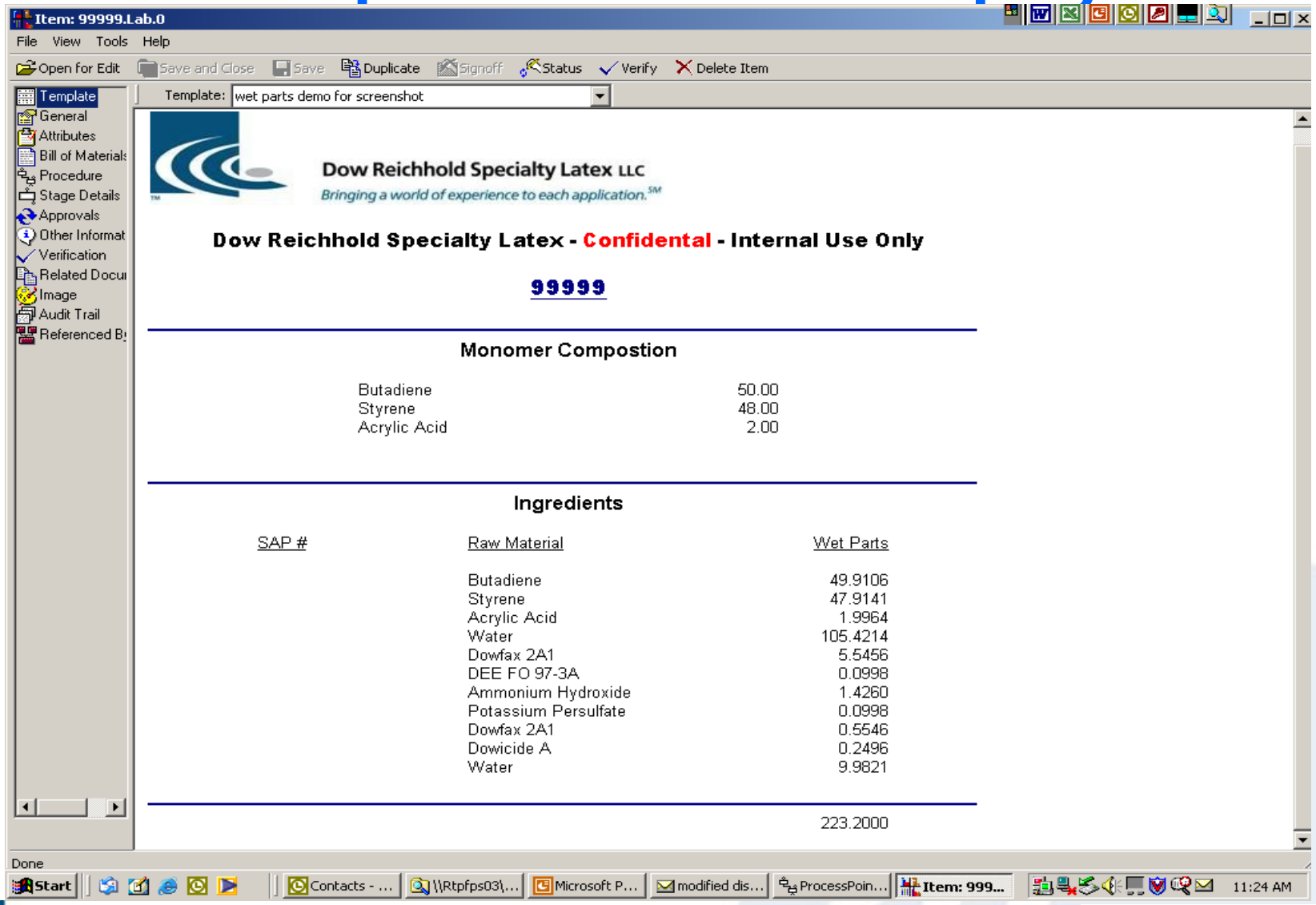
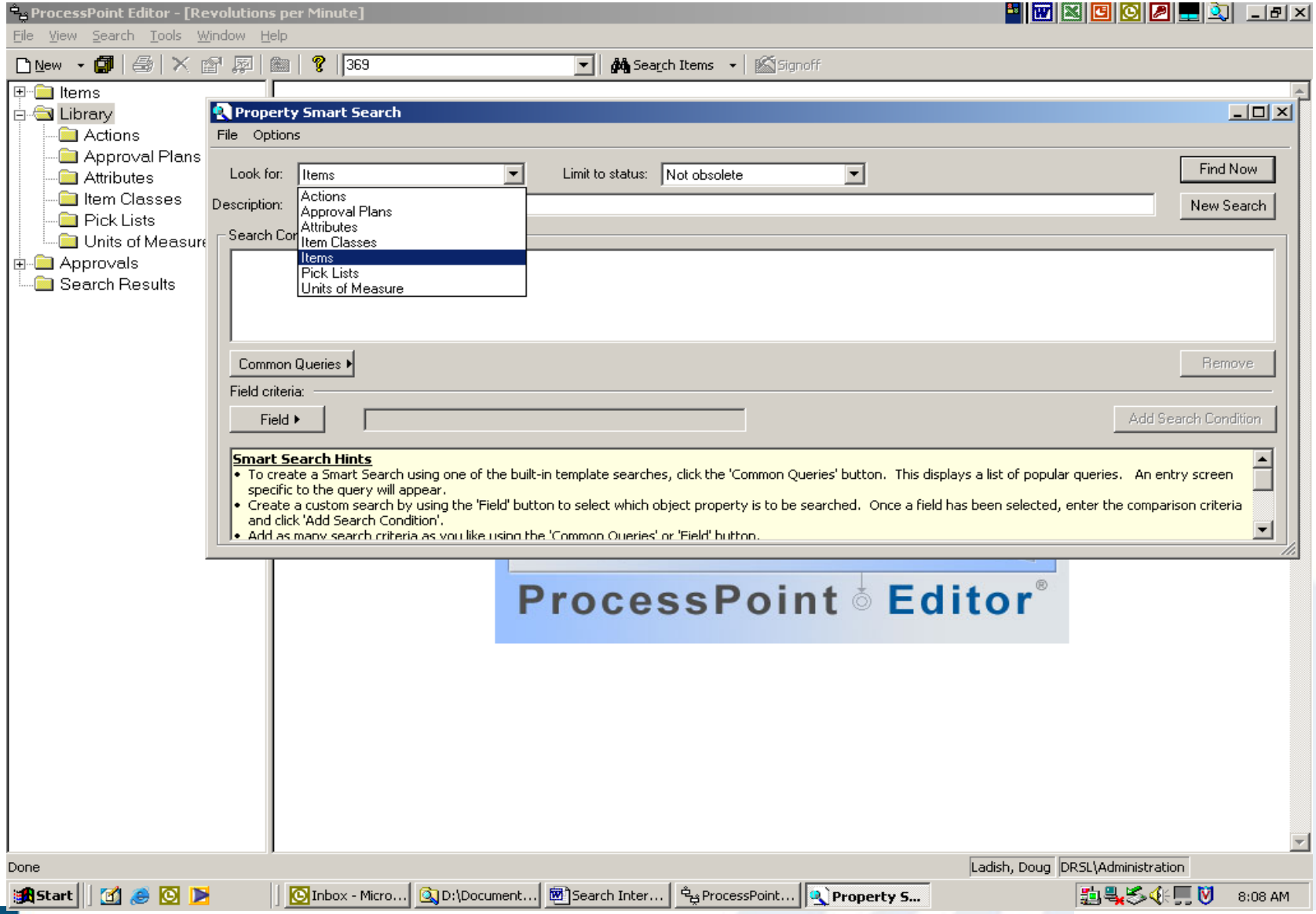
Sample Role-Based Display



Anticipated Benefits

- **Enhanced collaboration**
- **Improved scale-up practices**
  - Fewer errors
  - Reduced time to manufacturing
  - Improved quality
  - Metrics on new product development process
- **Improved management of change**
  - Single authoritative source of data
  - Networked application
  - User defined displays of data
- **Searchable Data Base**

Search Capabilities



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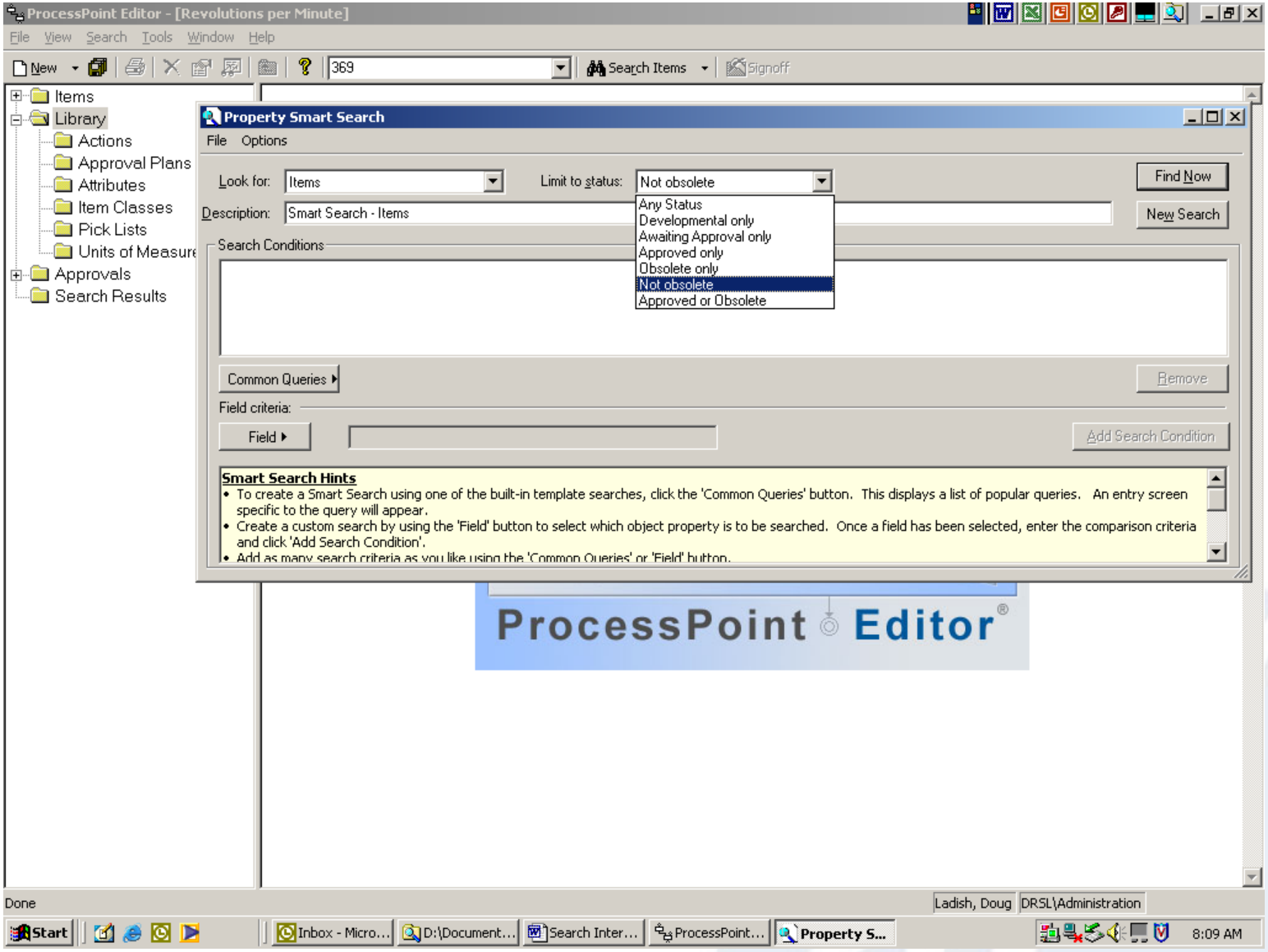

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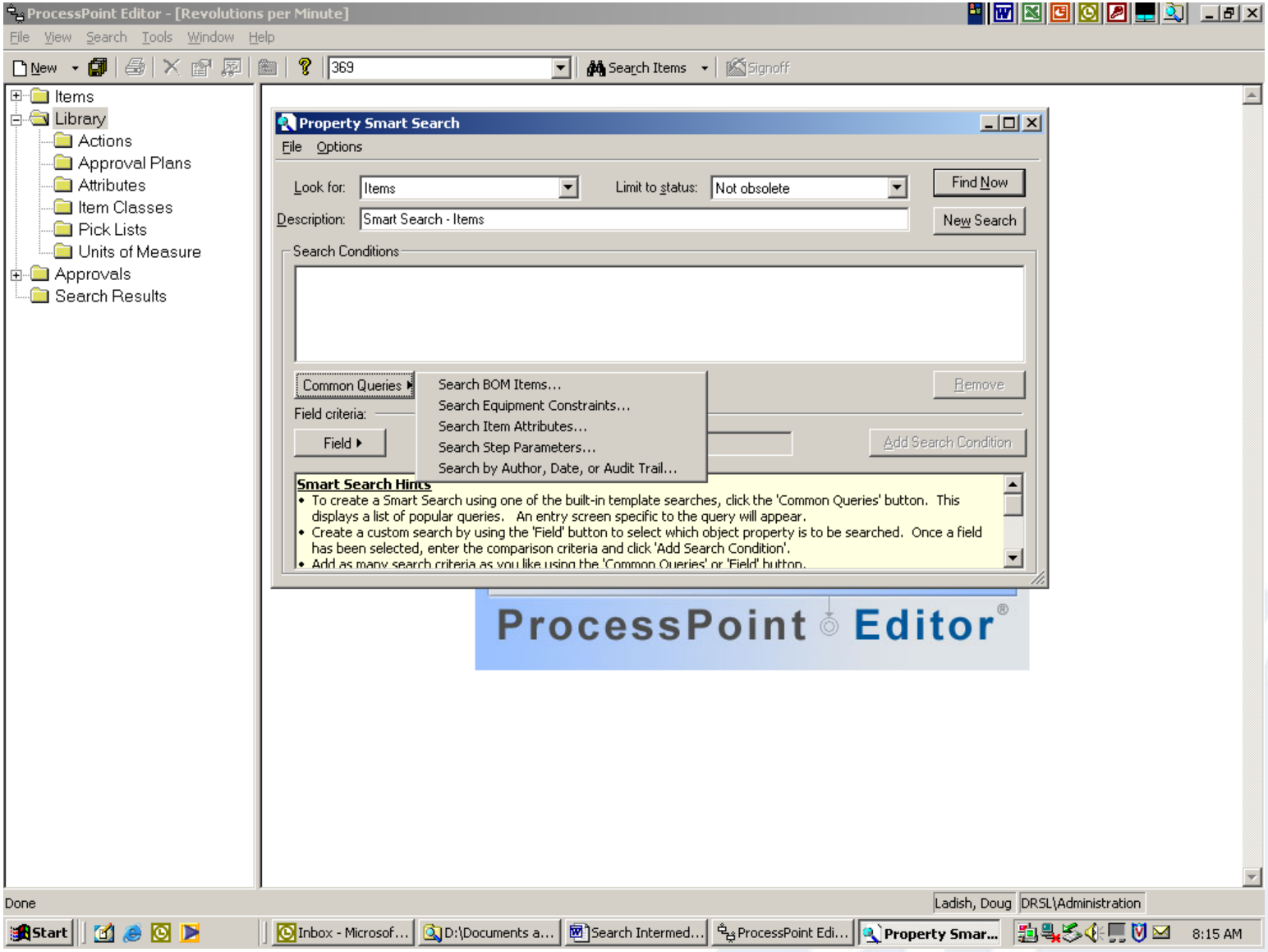

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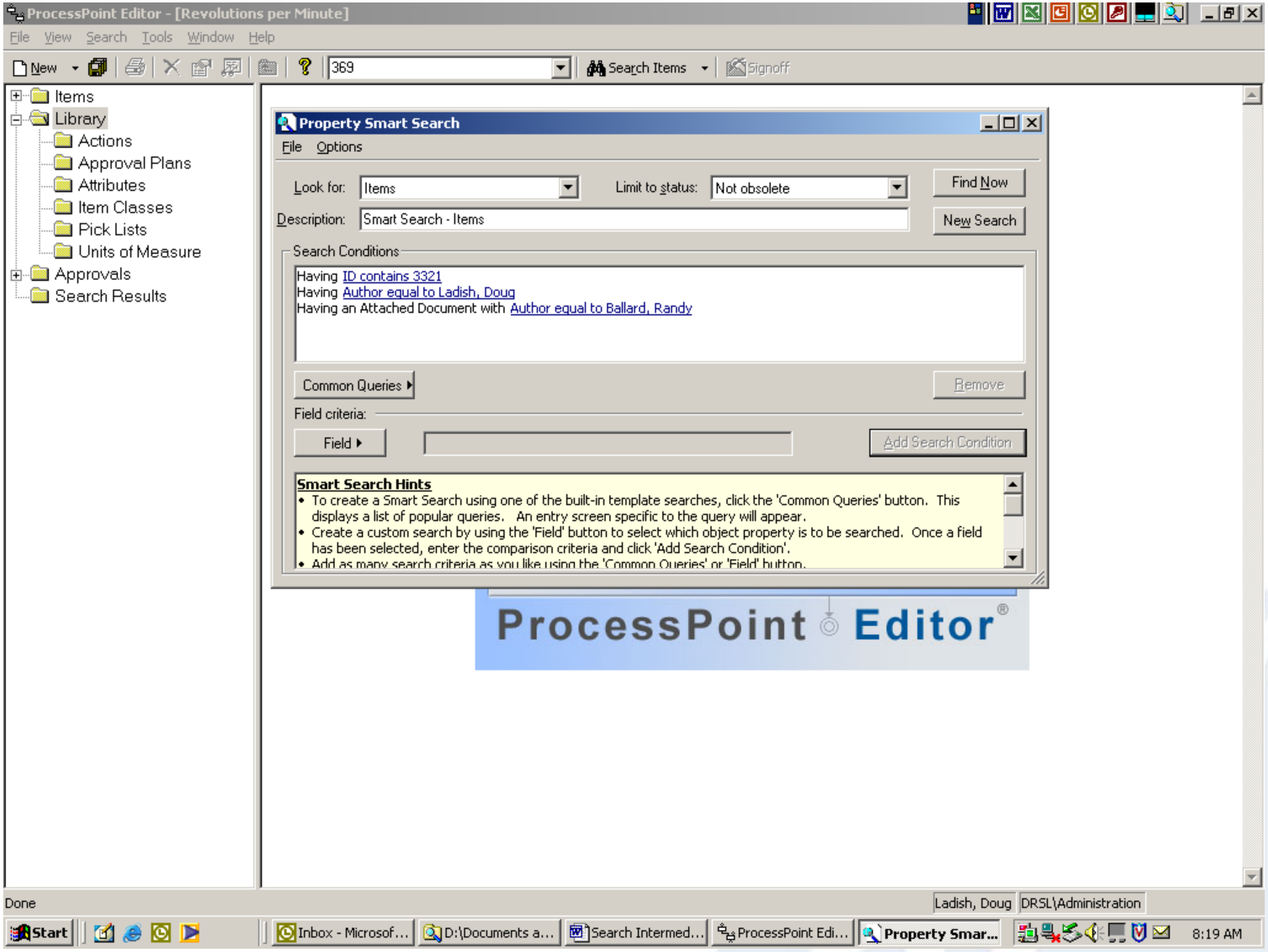

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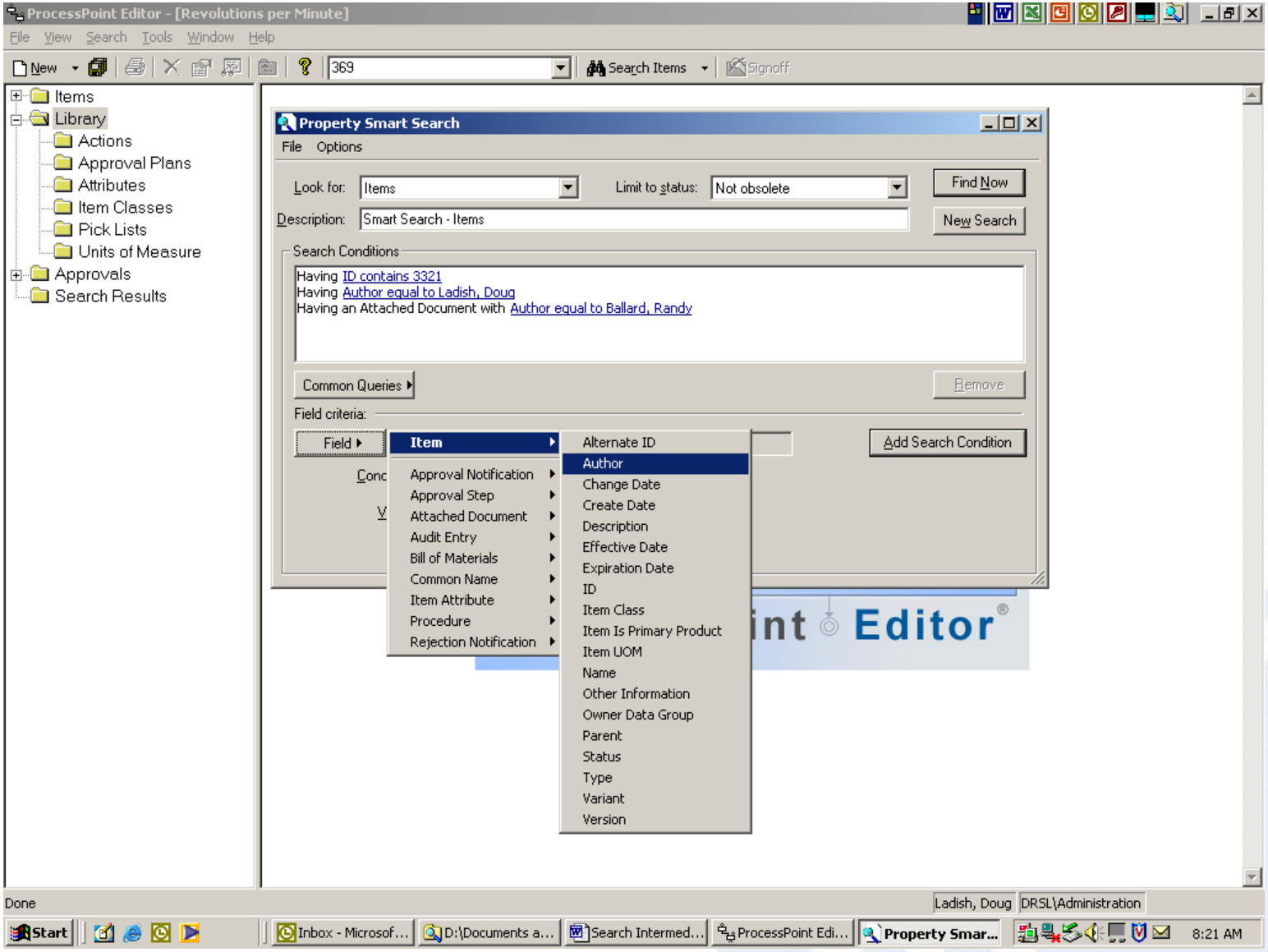

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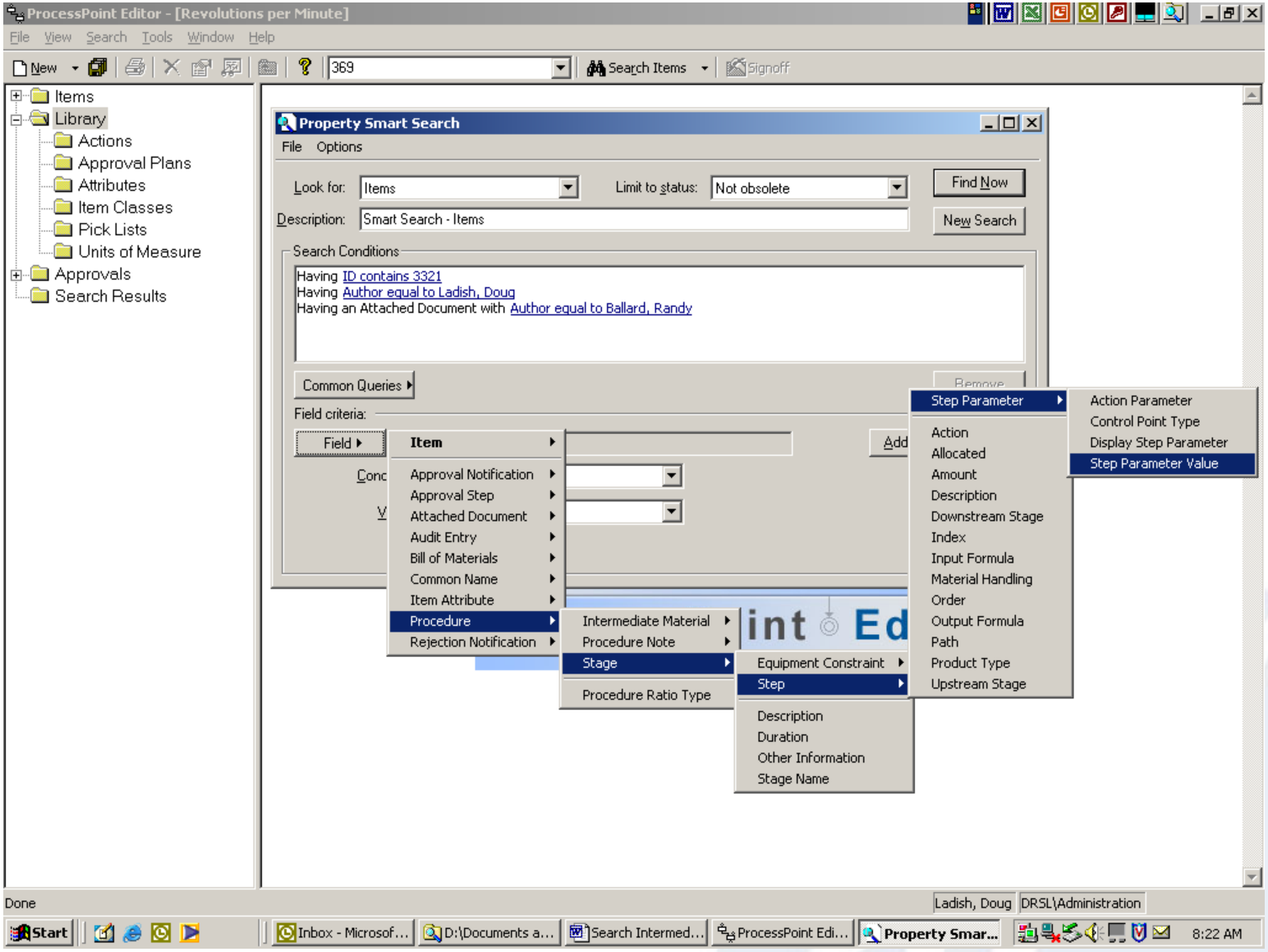

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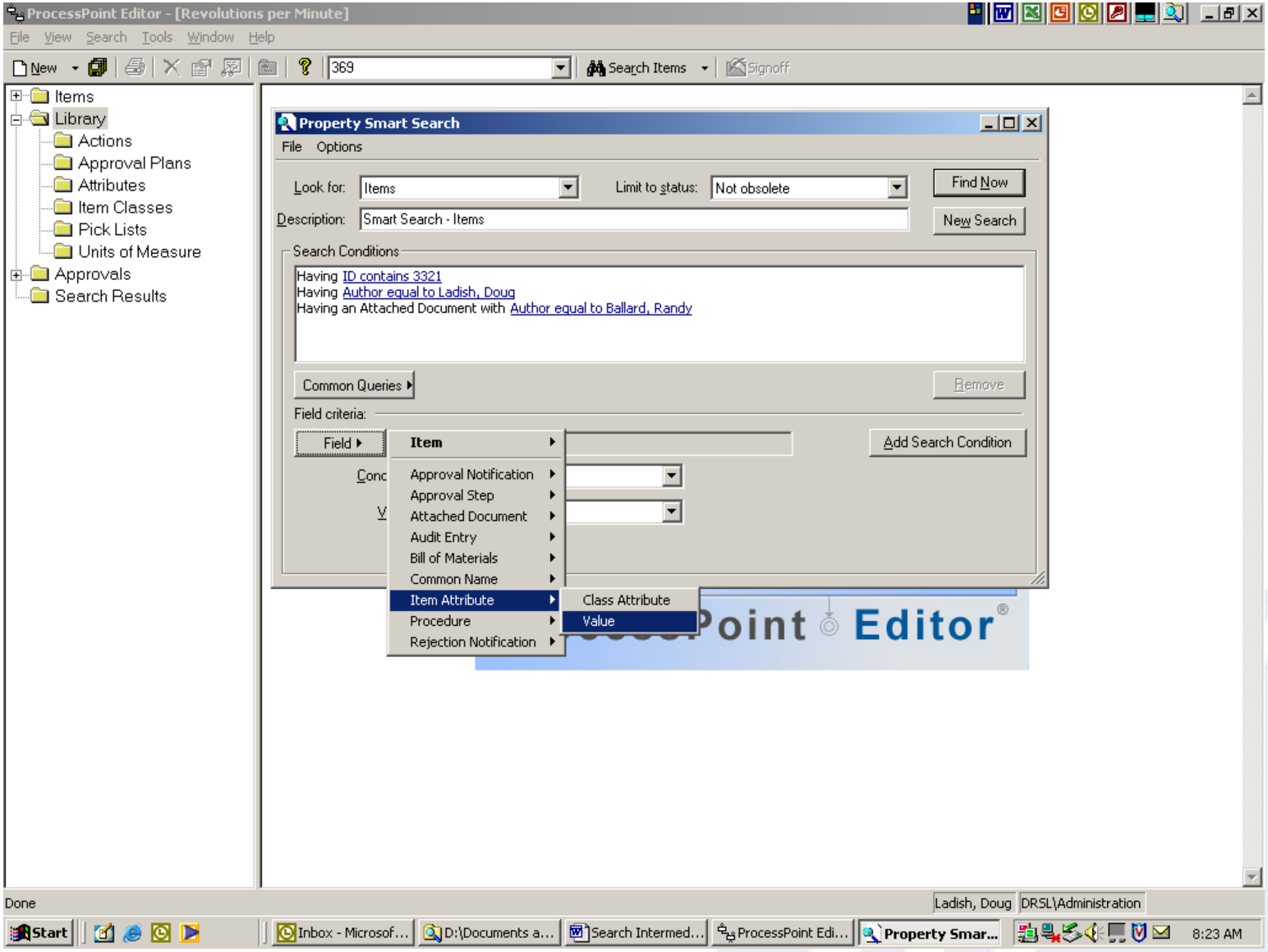

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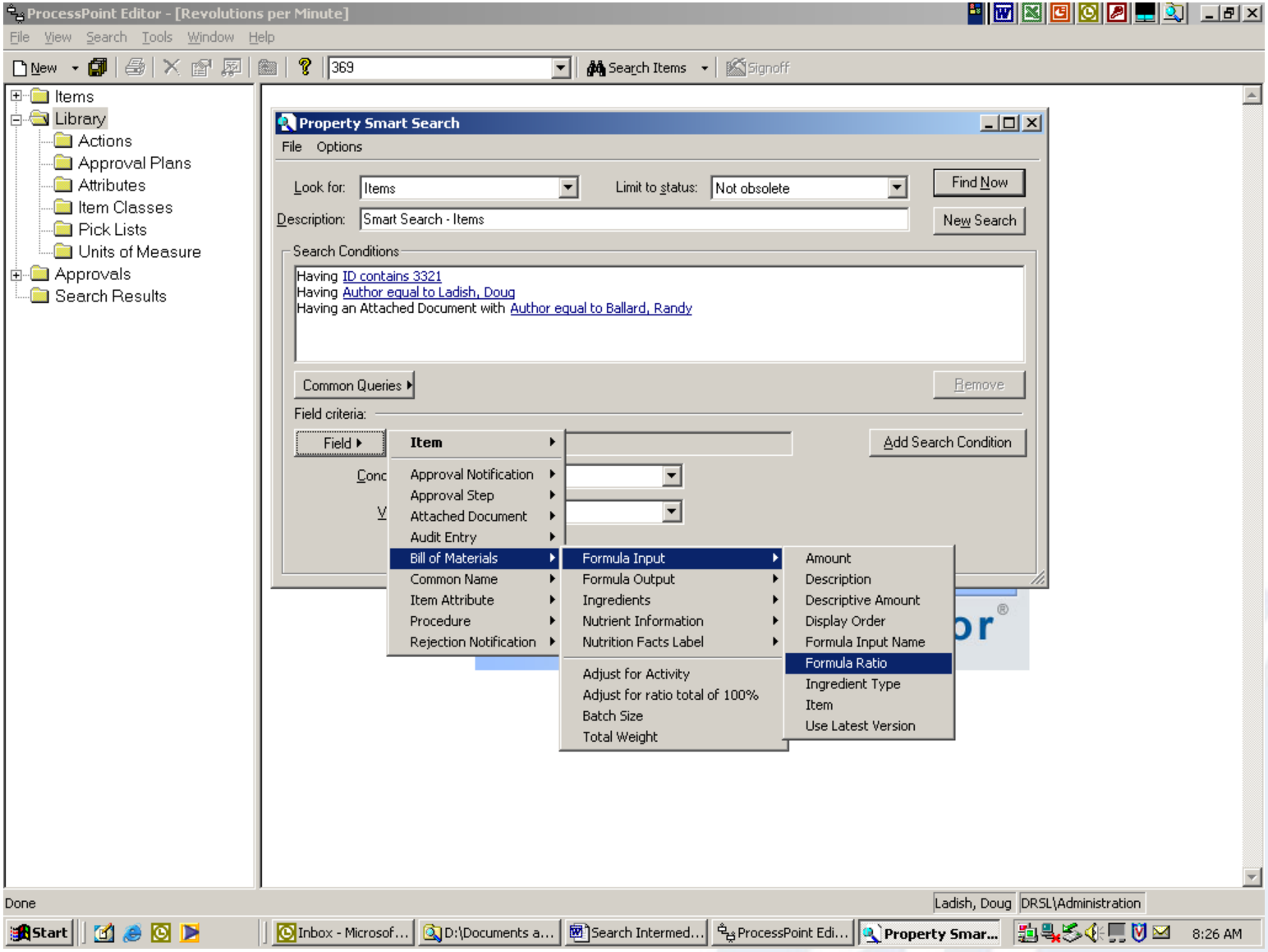

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Summary – Benefits Realized

Single, authoritative source of product information for other business systems.

- Master Recipes – composition, DCS procedure and parameters, LIMS specifications
- Raw Materials – approved materials and receiving specifications
- Enterprise accounting – material masters, scheduling, costing
- Regulatory – national chemical inventories and FDA status
- Marketing – active products, package types and sales specifications

Product innovation management

- Recipes reflect both “wet” and “dry” composition
- Organizational collaboration
- Accuracy of development plans and results
- Searchable data base
- Record of changes

Intellectual property

- Faster, more insightful management of change
- Record of changes – both events and details
- Limited access to view or change as appropriate

End