

### Dr. Googin and his early days at Y-12, part 3

In the last article we left the young “junior chemist” new recruit (John Googin) in the midst of his first tour of Y-12 operations. In his usually keen perceptive manner he was describing this eye-opening event.

Now let's take that tour with John, “A lab coat was put on and the tour was led by Ed. The tour was just off the one large room that held the Bulk Treatment Department equipment ... the room was equipped with a series of 250 gallon agitated, glass-lined, jacketed reaction vessels, high speed centrifuges, settling tanks, rotary filters, polishing filters, continuous centrifuges, driers and kilns and the usual associated valves, pumps, pipes and feeders. The open process equipment showed yellow solids and the room had the odor of ammonia.”

What a description, huh? The detailed description of this first encounter with Y-12 process equipment, while typical of Dr. Googin's penchant for detailed descriptions, is so finely described that what he was seeing of Y-12 must have made a huge impression on him at the time. He was looking for exciting and challenging work. I believe he knew right away that he had found it!

John's autobiographical narrative continues, “The rule of the observation game was that all the tanks and lines were labeled in number codes and no one could, or would, say what was being processed or the real name of anything of significance. There was a laboratory of sorts on the balcony off the highest operating level that was going to be the work area. The equipment was generally smaller than that in the bleachery and dye house where the recruit had worked for a summer, and much of it was familiar from the texts in school. After the short walk up and down the stairs and through the room, the little tour returned to Mr. Schmidt's office.”

Now we get to the part where John amazed the manager. John described that portion of his first encounter with his manager as follows, “Back across the desk from Mr. Schmidt, the new recruit was asked what he thought he had seen. He considered the unknown's and the known's for a few moments to weigh the possibilities of such a large facility (a facility smaller than the ship yard in which the recruit had worked as a youth), a facility of which he had only a brief glimpse walking down the hill from the gates and the little he had seen in one room of 9202 and came up with the following answer.”

“You are processing a heavy metal. It is probably uranium. You are separating the isotopes to make an atomic bomb.”

“Mr. Schmidt, and no one on the project for that matter, knew then that the recruit had been working, as part of his educational program, on the atomic energy possibility for the previous four years on the assumption that nuclear energy would be part of the wave of the future. There was a moment of silence and then a slow and guarded comment, ‘that was the quickest penetration of the security system on their records.’ It was said that it took some of the professional technical new hires as much as weeks to come to the correct conclusion.”

John concludes this tour episode with, “All this was followed with a lecture on the nature of the security system with almost everyone in isolated boxes and with the meaning of the codes like 704 means hydrogen peroxide and the element being process is ‘T’ for ‘Tuballoy’ and it makes a compound known as ‘724’ with hydrogen peroxide because Tuballoy is really  $720.724[\text{UO}(4)]$  and can be converted to  $723[\text{UO}(3)]$  by calcination, but 728 is liquid nitrogen.” Did you get that? Those of you who are chemists did, the rest of us might be a little slower picking up on the “codes.”

He finished by saying, “The emphasis was on not revealing what was being worked on to anyone who did not need to know, even when that person could be expected to deduce it eventually themselves. By definition only ‘some’ of the research people, like the process chemists, needed to know that it was uranium that was being worked with and most of them did not need to know what was going on in the rest of the plant.”

John then described the organization of the Y-12 Plant as being in small functional areas with restricted movement between areas. He also noted that the badge had a series of letters on it, up and down the

sides, which gave permission to enter a limited number of related areas. Each area was fenced in and there were guard portals for entry. Special permission had to be gained to visit other areas.

More of John's introduction to Y-12 will be included in the next article.