

The Perfect Storm

By

East Bay Municipal Utility District

[www.baywork.org](http://www.baywork.org)

INTRODUCTION

GRANT GILLEY

BORIS NOSS

Grant and Boris standing outside EBMUD plant

GRANT GILLEY

Hi. My name is Grant Gilley.

BORIS NOSS

And my name is Boris Noss. We are instrument technicians at East Bay Municipal Utility District.

GRANT GILLEY

Our math skills are necessary in order for our agency to provide reliable water and wastewater service to over a million people in Northern California.

BORIS NOSS

We know that students sometimes wonder where they will need to use math skills - we know we did when we were in school. We thought it might interest you to see an example of why math matters. The following is a mock event.

SCENE 1 - CONTROL ROOM

Boris is sitting at a chair with his coffee, looking at the monitors.

GRANT GILLEY

"Boris, There's a problem! The water tank is overflowing!!"

BORIS NOSS

"What? The water levels are fine"

cut to computer screen showing all is fine

GRANT GILLEY

"Dude, get out of that chair and look outside!"

cut to overflowing tank and thunderstorm

(CONTINUED)

BORIS NOSS

"Oh man why didn't you tell me sooner?"

Grant shakes his head

BORIS NOSS

(On the phone) "Turn the pumps off now!"

Cut to sign saying "Later..."

SCENE 2 - CONTROL ROOM

GRANT GILLEY

"So what happened?"

BORIS NOSS

"We don't know. It could be due to calibration error in the transmitter. Let's take a look."

SCENE 3 - TRANSMITTER SET-UP IN SHOP

BORIS NOSS

The transmitter senses the water pressure, which is determined by how much water is in the tank; the more water is in the tank, the higher the water pressure will be. The transmitter sends this information to the plant's control system.

GRANT GILLEY

The transmitter's LINEAR output signal represents water height in the tank. In this case, a signal of 4 milliamps represents a water level of 0 feet, and a signal of 20 milliamps represents a level of 19.8 feet of water. . . Let's use this pressure pump (hold up instrument to camera) to test whether the transmitter is working correctly. We will apply pressure to the sensor at 5 points along its input range and write down the output signal values for each step.

BORIS NOSS

(Looking at camera and speaking to the audience.)

We need to see if the numbers recorded by the transmitter are within 2% of the actual pressure being applied by the pressure pumps. Can you help us out?"

ENDING

BORIS NOSS

Being an instrument technician in the water industry is a great job.

GRANT GILLEY

If you'd like to hear more about how Boris and I got our jobs and how you could prepare yourself for a career in the Water or Wastewater industry, please visit the BAYWORK website to hear our personal stories. The career section of the website is full of information about great water industry jobs.