F Prime Static Memory Allocation Flow

```
// Step 1: Request Memory & Check Pool
  bool isPoolAvailable(size_t requested_size) const {
      return !is_allocated && (requested_size <=
POOL_SIZE);
  }
```

```
// Step 2: Allocate Block
 uint8_t* allocateBlock(size_t size) {
    if (!isPoolAvailable(size)) {
        return nullptr;  // Error case - would trigger error handler
    }

    is_allocated = true;
    return pool;  // Return pointer to allocated memory
 }
```

```
// Step 3: Return Buffer (implicitly part of allocateBlock)

   // Step 4: Use Memory (handled by client code)
```

```
// Step 5: Deallocate
   void deallocate() {
       is_allocated = false;
     }
```